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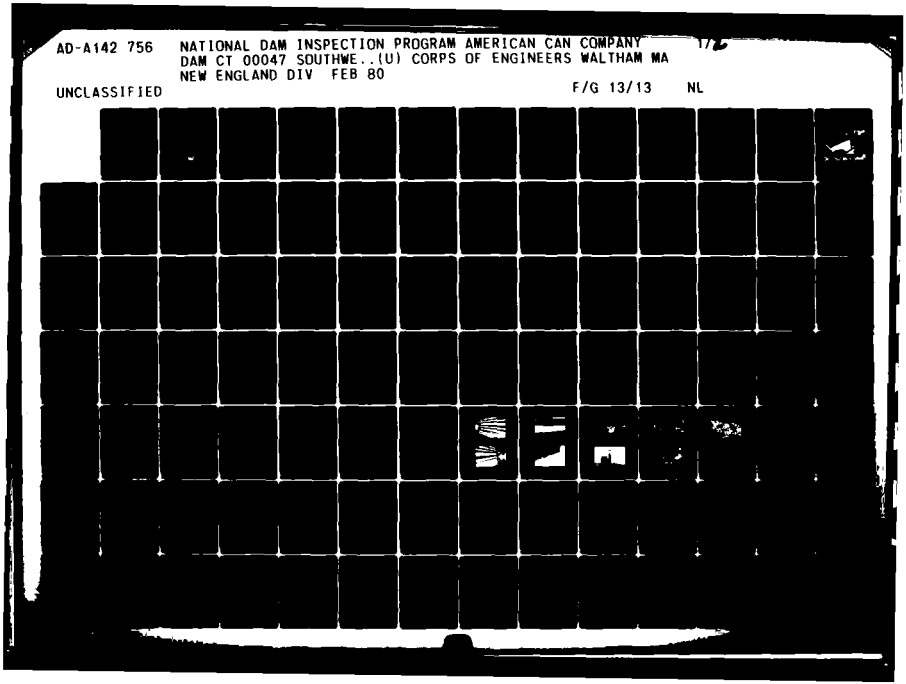

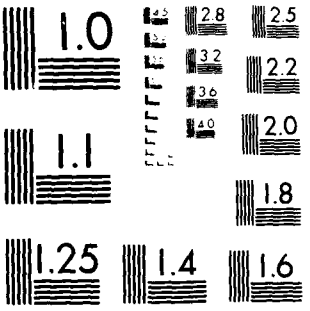

SOUTHWESTERN COASTAL BASIN

GREENWICH, CONNECTICUT

AMERICAN CAN COMPANY DAM
CT 00047

PHASE 1 INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.

FEBRUARY, 1980

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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18. SUPPLEMENTARY NOTES

Cover program reads: Phase I Inspection Report, National Dam Inspection Program; however, the official title of the program is: National Program for Inspection of Non-Federal Dams; use cover date for date of report.

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

DAMS, INSPECTION, DAM SAFETY,

Southwestern Coastal Basin
Greenwich, Conn.
American Can Company Dam

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The dam at the American Can Company building in Greenwich, Conn, consists of the north wall of a parking garage which retains earth and the adjacent created pond to a depth of five levels belov grade. The height of this wall is 53 ft. This dam is classified as INTERMEDIATED in size and a HIGH hazard structure in accordance with the recommended guidelines established by the Corps of Engineers. The test flood for this dam is equal to th PMF and has an outflow discharge equal to 83 cfs. The maximum outflow capacity of the overflow weir under a stillwater condition at the top of the weir opening is equal to 500 cfs, which represents more than 100 percent of the test flood.

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DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02154

REPLY TO
ATTENTION OF
NEDED

MAR 21 1980

Honorable Ella T. Grasso
Governor of the State of Connecticut
State Capitol
Hartford, Connecticut 06115

Dear Governor Grasso:

Inclosed is a copy of the American Can Company Dam Phase I Inspection Report, which was prepared under the National Program for Inspection of Non-Federal Dams. This report is presented for your use and is based upon a visual inspection, a review of the past performance and a brief hydrological study of the dam. A brief assessment is included at the beginning of the report. I have approved the report and support the findings and recommendations described in Section 7 and ask that you keep me informed of the actions taken to implement them. This follow-up action is a vitally important part of this program.

A copy of this report has been forwarded to the Department of Environmental Protection, the cooperating agency for the State of Connecticut. In addition, a copy of the report has also been furnished the owner, American Can Company, Greenwich, Connecticut.

Copies of this report will be made available to the public, upon request, by this office under the Freedom of Information Act. In the case of this report the release date will be thirty days from the date of this letter.

I wish to take this opportunity to thank you and the Department of Environmental Protection for your cooperation in carrying out this program.

Sincerely,

MAX B. SCHEIDER
Colonel, Corps of Engineers
Division Engineer

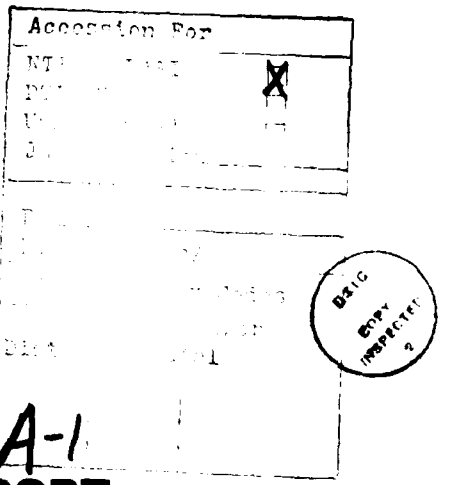
Incl
As stated

SOUTHWESTERN COASTAL BASIN

GREENWICH, CONNECTICUT

AMERICAN CAN COMPANY DAM

CT 00047



PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM

NATIONAL DAM INSPECTION PROGRAM

PHASE I INSPECTION REPORT

Inspection No.:	CT 00047
Name of Dam:	American Can Company Dam
Town:	Greenwich
County and State:	Fairfield, Connecticut
Stream:	Tributary to Louden Cove
Date of Inspection:	November 13, 1979

BRIEF ASSESSMENT

The dam at the American Can Company building in Greenwich, Connecticut, consists of the north wall of a parking garage which retains earth and the adjacent created pond (North Lake) to a depth of five levels below grade. The height of this wall is 53 feet.

There are no visible signs of physical distress and for reasons of fire protection, the water level is monitored very closely. Based on the visual inspection and a review of the technical data available, this dam is judged to be in GOOD condition.

This dam is classified as INTERMEDIATE in size and a HIGH hazard structure in accordance with the recommended guidelines established by the Corps of Engineers. The test flood for this dam is equal to the Probable Maximum Flood (PMF) and has an outflow discharge equal to 83 cfs. The maximum outflow capacity of the overflow weir under a stillwater condition at the top of the weir opening is equal to 500 cfs, which represents more than 100 percent of the test flood.

Rebuilding the headwall at the 48 inch outfall pipe is recommended within a 2 year period so that sedimentation buildup at this location can be monitored and clogging prevented.

Recommendations and remedial measures that should be implemented by the Owner within a two year period after receipt of this Phase I Inspection Report are further described in Section 7.

JAMES P. PURCELL ASSOCIATES, INC.

Sudhir A. Shah, P.E.
Vice-President
Connecticut P.E. No. 8012

This Phase I Inspection Report on American Can Company Dam has been reviewed by the undersigned Review Board members. In our opinion, the reported findings, conclusions, and recommendations are consistent with the Recommended Guidelines for Safety Inspection of Dams, and with good engineering judgment and practice, and is hereby submitted for approval.

Carney M. Terzian

CARNEY M. TERZIAN, MEMBER
Design Branch
Engineering Division

Richard J. DiBuono

RICHARD DIBUONO, MEMBER
Water Control Branch
Engineering Division

Aramast Mahtesian

ARAMAST MAHTESIAN, CHAIRMAN
Foundation & Materials Branch
Engineering Division

APPROVAL RECOMMENDED:

Joe B. Fryar

JOE B. FRYAR
Chief, Engineering Division

PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation. However, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through continued care and inspection can there by any chance that unsafe conditions be detected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the spillway test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and downstream damage potential.

The Phase I Investigation does not include an assessment of the need for fences, gates, no-trespassing signs, repairs to existing fences and railings and other items which may be needed to minimize trespass and provide greater security for the facility and safety to the public. An evaluation of the project for compliance with OSHA rules and regulations is also excluded.

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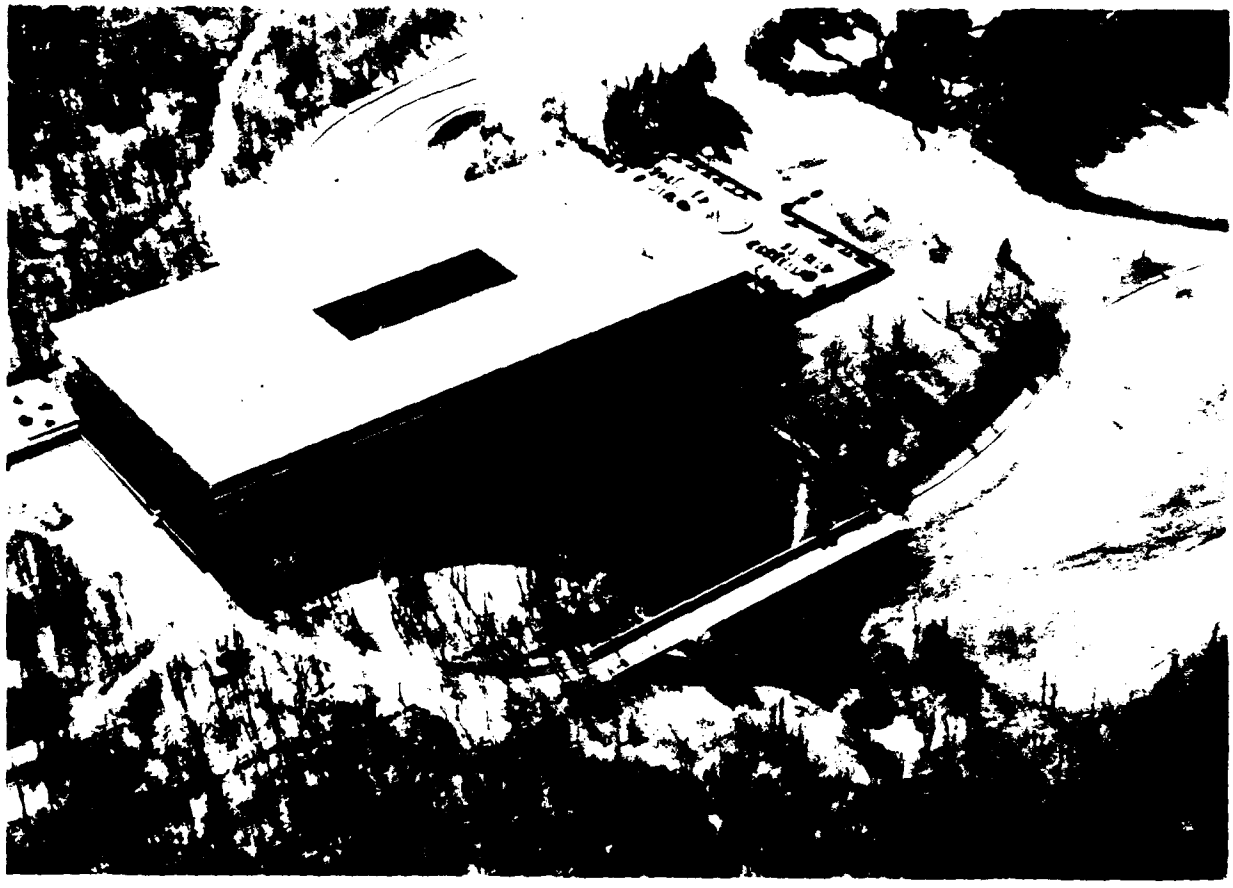
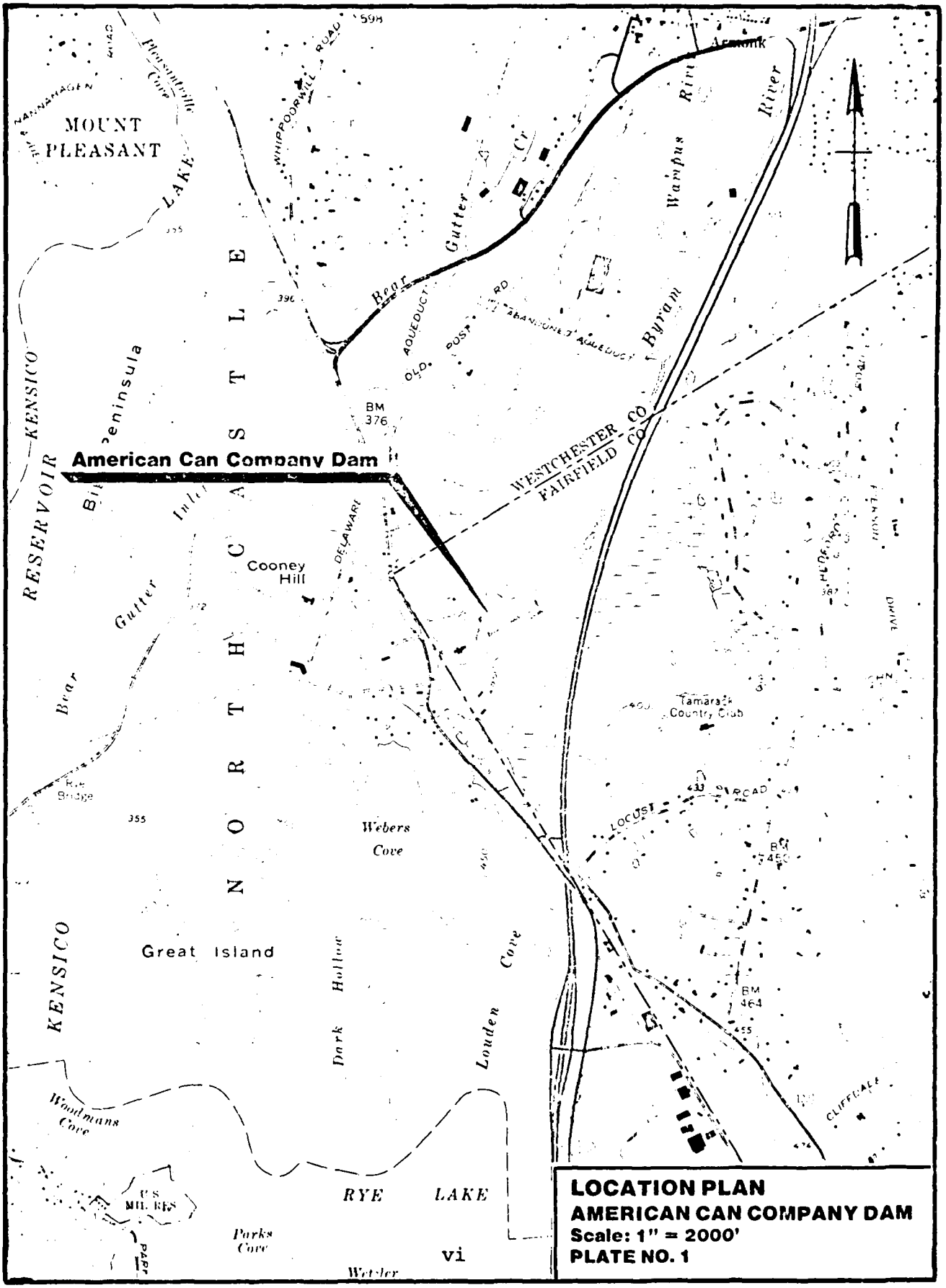
APPENDIXES





LOCATION PLAN
AMERICAN CAN COMPANY DAM
Scale: 1" = 2000'
PLATE NO. 1

NATIONAL DAM INSPECTION PROGRAM

PHASE I - INSPECTION REPORT

NAME OF DAM: AMERICAN CAN COMPANY DAM

SECTION 1

PROJECT INFORMATION

1.1 General

a. **Authority:** Public Law 92-367, August 8, 1972, authorized the Secretary of the Army through the Corps of Engineers to initiate a national program of dam inspection throughout the United States. The New England Division of the Corps of Engineers has been assigned the responsibility of supervising the inspection of dams within the New England Region. James P. Purcell Associates, Inc. has been retained by the New England Division to inspect and report on selected dams in the State of Connecticut. Authorization and notice to proceed was issued to James P. Purcell Associates, Inc., under a letter from William E. Hodgson, Jr., Colonel, Corps of Engineers. Contract No. DACW33-80-C-0002 has been assigned by the Corps of Engineers for this work.

b. **Purpose of Inspection**

1. Perform technical inspection and evaluation of non-Federal dams to identify conditions which threaten the public safety and thus permit correction in a timely manner by non-Federal interests.

2. Encourage and prepare the States to initiate quickly effective dam safety programs for non-Federal dams.

3. To update, verify and complete the National Inventory of Dams.

1.2 Description of Project

a. **Location:** The dam at the American Can Company Executive Office Building is located in the Town of Greenwich near the New York - Connecticut State Line (See Plate No. 1). The impoundment is in the watershed of an unnamed tributary to Rye Lake entering at Louden Cove. The dam is 3000 feet upstream of Louden Cove. The latitude is 41° -06'-00" and the longitude is 73° -43'-18".

b. **Description of Dam and Appurtenances:** The extent of this dam can best be described as the concrete structural wall on the north side of the underground parking garage for the employees of the American Can Company.

The pond (North Lake) is created by the north wall of the building and extends up a small natural valley. There are no streams entering the pond, which is fed by stormwater runoff and groundwater.

A 15 foot wide overflow weir in an opening in the north wall maintains a constant water elevation in the pond. A 12 inch drain extends from the bottom of the pond through the building wall. A 3 foot by 8 foot vertical chase carries water from the weir and building to an outfall below the south side of the building and a small natural channel. Other pipes for the fire protection system extend from the pond to the building.

c. **Size Classification:** The size classification of this dam is INTERMEDIATE as per the criteria set forth in the Recommended Guidelines for Safety Inspection of Dams by the Corps of Engineers. The impoundment storage at the top of the dam (top of the weir opening) is 26 ac.-ft. (the "small" category range is 50 to 1000 ac.-ft.) and the maximum height of the dam is 53 feet (within the "intermediate" category range of 40 to 100 feet). The size classification is based on the height criteria.

d. **Hazard Classification:** The hazard classification of this dam is HIGH as per the criteria set forth in the Recommended Guidelines for Safety Inspection of Dams by the Corps of Engineers. The failure of the dam (building wall) would result in extensive damage to the lower levels of the American Company building, the loss of the fire protection water supply, and the possibility of the loss of more than a few lives should failure occur during commuting hours when the garage is full of people.

e. **Ownership:** The dam is the wall of the building, which is owned and maintained by the American Can Company of Greenwich, Connecticut.

f. **Operator:** The person in charge of the day-to-day operation of this dam is:

Mr. Vincent Lex, Jr.
American Can Company
American Lane
Greenwich, CT 06830
Tel. (203) 522-2089

g. **Purpose of Dam:** The purpose of this dam is to retain the earth and water on the north side of the garage for the office building. The water impounded by this dam is used primarily for fire protection and it also has an aesthetic function.

h. **Design and Construction History:** North Lake and the dam was constructed in 1968 by the Turner Construction Company of New York as part of the garage for the office building of the American Can Company. The bottom of this pond, originally covered with bentonite, was recovered with a plastic liner in 1972 to prevent the loss of water and embankment material through the foundation drain (located along the building wall two feet below the fifth garage level). A piezometer, connected to the foundation drain, is located in the building. This pond has leaked once since the 1972 repairs, at which time the plastic liner was patched.

The original structural design for this building was done by Paul Weidlinger of New York and the design of the plastic liner repair was engineered by Mueser, Rutledge, Wentworth and Johnston of New York.

i. **Normal Operational Procedure:** North Lake has a very small drainage area and as a result, the water level fluctuates very little during a heavy storm. This facility requires no operation; however, the spillway and the piezometer at the lowest level of the north wall are checked during each shift (3 times each day).

1.3 Pertinent Data

a. **Drainage Area:** The American Can Company Dam is located in Fairfield County, Connecticut. The drainage basin lies approximately 2 miles west of North Greenwich, Connecticut. The basin is oval in shape with a length of 0.11 miles and an average width of 0.2 miles, resulting in a total drainage area of 0.02 square miles. (See drainage basin map in Appendix D). The topography is a generally rolling to steep terrain, with elevations ranging from a high of 440 feet to a low of 361 feet at the overflow weir crest. The basin slope is steep having average grades of 18 percent. The normal surface area of the pond is 2.0 acres, which is 16 percent of the watershed.

All elevations used in this report are based on an assumed datum (ACCD) established for the construction of the American Can Company Building. No relation to the National Geodetic Vertical Datum (NGVD) has been established.

b. **Discharge at Dam Site:** There are no specific discharge records available for this dam. Listed below are calculated discharge values for the overflow weir and outlet works.

1. Outlet Works: A 12 inch drain pipe with an intake elevation of 343.0 feet, and a discharge capacity of 16 cfs at a pond elevation of 361.0.

2. Maximum Known Flood at Dam Site: Calculated to be 6 cfs based on a reported maximum depth of flow over the weir of 3 inches.

3. Overflow Weir Capacity at the Top of the Weir Opening: 500 cfs at elevation 365.6.

4. Overflow Weir Capacity at Test Flood Elevation: 83 cfs at elevation 362.4.

5. Gated Outlet Capacity at Normal Pool Elevation: 16 cfs at elevation 361.0.

6. Gated Outlet Capacity at Test Flood Elevation: 16.5 cfs at elevation 362.4.

7. Gated Outlet Capacity at the Top of the Weir Opening: 18 cfs at elevation 365.6.

8. Total Project Discharge at Top of the Weir Opening: 518 cfs at elevation 365.6.

9. Total Project Discharge at Test Flood Elevation: 99.5 cfs at elevation 362.4.

c. **Elevation** (Ft. above American Can Company Datum - ACCD):

1.	Stream bed at toe of dam	295 (Downstream)
2.	Bottom of cutoff (foundation)	300+/-
3.	Maximum tailwater	Unknown
4.	Recreation pool	N/A
5.	Full flood control pool	N/A
6.	Spillway crest (overflow weir)	361.0
7.	Design surcharge (original design)	Unknown

8.	Top of dam (top of weir opening)	365.6
9.	Test flood level	362.4

d. **Reservoir** (Length in Feet)

1.	Normal pool	450
2.	Flood control pool	N/A
3.	Spillway crest pool	450
4.	Top of dam	450
5.	Test flood pool	450

e. **Storage** (Acre-Feet)

1.	Normal pool	18
2.	Flood control pool	N/A
3.	Spillway crest pool	18
4.	Top of dam	26
5.	Test flood pool	21

f. **Reservoir Surface** (Acres)

1.	Normal pool	2.0
2.	Flood control pool	N/A
3.	Spillway crest	2.0
4.	Top of dam	2.3
5.	Test flood pool	2.1

g. **Dam** (Building Wall)

1.	Type	Concrete Wall

2.	Length	543 ft.
3.	Height	53 ft.
4.	Top Width (wall)	14 inches
5.	Side Slopes	Upstream: 2.5H:1V Downstream: Vertical
6.	Zoning	Pervious layer next to building leads to foundation drain.
7.	Impervious Core	N/A
8.	Cutoff	N/A
9.	Grout Curtain	N/A
10.	Other	N/A

h. **Diversion and Regulating Tunnel** — N/A

i. **Spillway** (overflow weir)

1.	Type	Uncontrolled overflow, sharp crest weir plate
2.	Length of Weir	15'
3.	Crest Elevation	361.0
4.	Gates	None
5.	U/S Channel	Pond
6.	D/S Channel	Vertical Chase
7.	General	- - -

j. **Regulating Outlets** (12 inch drain)

Refer to Paragraph 1.2b "Description of Dam and Appurtenances" for description of outlet works.

1.	Invert	343.0
2.	Size	12 inches
3.	Description	RCP
4.	Control Mechanism	Hand operated valve within building
5.	Other	Screened intake

SECTION 2

ENGINEERING DATA

2.1 Design

The design information available consists of the following:

a. Structural computations done by Paul Weidlinger of New York.

b. Several contract drawings from the original plans.

c. A report by Mueser, Rutledge, Wentworth and Johnston, which outlines several suggested schemes for repair of the leakage problems experienced in 1972.

Refer to Appendix B-1 for the location of this information.

2.2 Construction

The construction of the dam (building) was started in 1968 by the Turner Construction Company. Since the newly created North Lake would not stay full and studies showed that the water was leaking out through the underdrain system, a plastic liner was installed on the lake bottom in 1972. This solution appears to have solved the problem as only one leak has been observed since. The lake was drained and a cavity was found where the liner had burst. The cavity was filled with sand and the liner was repaired.

2.3 Operation

No operation is required at this dam. However, for purposes of fire protection, there are two separate lines which feed different areas of the building as well as a sprinkler system which goes throughout the facility. The engineer in charge of maintenance, Mr. Lex, stated that the entire pond could be drained in less than 8 hours, if required, during an emergency.

2.4 Evaluation

Since there were no apparent visual signs of distress, there was no need for further review of the design data. The hydraulic capacity of the overflow weir and outlet works are discussed fully in Section 5.

SECTION 3

VISUAL INSPECTION

3.1 Findings

a. **General:** The visual inspection was conducted on the morning of November 13, 1979 and a copy of the visual inspection check list is contained in Appendix C of this report.

The following procedure was used.

1. Inspection of the lake area around the north side of the building.

2. Visual survey of the outside portion of the north wall above the waterline.

3. Survey of structural wall condition at 1st, 3rd, and 5th floor levels of garage.

4. Check of drainage outlet at the south side of the building.

5. Photographs were taken of the general view of the building as well as other items given attention during the inspections, and are included in Appendix C of this report.

Before the inspection, the design and construction documents and aerial photographs were studied and reviewed.

b. **Dam:** The north wall of the parking garage retains the earth and lake for 5 levels below grade. There was no seepage observed at any place on the face of this wall. The general condition of this wall was very good. No evidence of any settlement or movement was observed (Photos C-I, C-2).

c. **Appurtenant Structures:** The overflow weir for this pond drains into a 3' x 8' vertical chase, outletting to a 48 inch RCP, which goes under the building and drains into the swamp area on the south side of the building. The weir was in good condition and seemed to be functioning very well. The maximum depth of water on the weir that anyone could recall was approximately 3 inches (Photos C-3, C-4). A 12 inch drain, controlled by a valve in the building (Photo C-5) also extends from the pond to the chase.

d. **Reservoir Area:** An inspection of the immediate area of the lake showed there was no evidence of any movement of the embankment area next to the north wall of the building. The upstream area is mowed and maintained very well.

e. **Downstream Channel:** The downstream channel consists of a 48 inch diameter blowoff pipe which carries the spillway flow into a swampy area at the south side of the building. The outlet is covered with field stone to prevent access. However, overflow from the pond appears to be flowing freely, although the pipe is approximately 1/3 full of sediment (Photo C-9, C-10).

3.2 Evaluation

In general, the visual inspection showed this dam to be in good condition. There were no signs of any distress to any part of the north wall of the building. There appeared to be a need for improvement of the headwall arrangement at the outfall, due to the blockage and sedimentation.

SECTION 4

OPERATIONAL AND MAINTENANCE PROCEDURES

4.1 Operational Procedures

a. **General:** The responsibility of the operation and maintenace for this facility is with the Maintenance Department of the American Can Company. The overflow weir level can be controlled with an adjustable stainless steel weir plate on the south face of the wall. Since the drainage area is so small, the water level has a very narrow range. The real maintenance concern at this site is that the plastic liner does not develop another leak, such that the water which is a source of fire protection, could be lost.

b. **Warning System:** The warning system is the piezometer, which is located on the fifth level of the garage. The piezometer is monitored three times per day so that any groundwater pressure buildup (water not freely drained by the foundation drain), which would indicate a leak in the liner, could be detected. No written or formal operating procedure has been established. Each watch of the maintenance crew has been instructed to notify the supervisor if the piezometer reading changes from "zero" (Photo C-6).

4.2 Maintenance Procedures

a. **General:** The building was designed so that its maintenance would be minimal. The outfall of this dam is hardly ever checked and as a result, the area near the headwall is in almost its natural condition.

b. **Operating Facilities:** The three outlets to this pond penetrate the north wall at the third level. Two of these outlets feed the fire protection system and the third outlet is used to drain the pond. Insurance requirements are such that the pumps are exercised regularly (Photos C-7, C-8).

4.3 Evaluation

From the aspect of safety, the operational and maintenance procedures for this dam seem adequate. Improvement of the headwall arrangement at the outfall would help the monitoring of siltation at this point.

SECTION 5

EVALUATION OF HYDRAULIC/HYDROLOGIC FEATURES

5.1 General

The American Can Company building, built across a small natural valley, creates a pond against the north side of the building. The basin slopes are steep, having average grades of 18 percent. The impoundment has a total storage capacity of 18 ac.-ft. at elevation 361.0, the overflow weir crest. Each foot of depth in the pond above the overflow weir crest can accommodate approximately 2 ac.-ft. The overflow weir is a rectangular opening in the building wall and is 15 feet in length and 4.63 feet in height.

5.2 Design Data

a. No specific hydraulic or hydrologic design data is available for this watershed or the drainage structures of the American Can Company Dam. In lieu of existing design information, U.S.G.S. Topographic Maps (Scale 1" - 2000') were utilized to develop hydrologic parameters such as drainage area, basin length, time of concentration and other runoff characteristics. Elevation - storage relationships for the reservoir were approximated. Reservoir surface area and surcharge storage was computed using a lake plan prepared by the American Can Company (see Appendix B). Some of the pertinent hydraulic design data was obtained and/or confirmed by actual field measurements at the time of the visual field inspection.

b. Outflow values (routing procedures) and dam overtopping analyses were computed in accordance with the guidelines developed by the Corps of Engineers. Judgment was used in calculating final values outlined in this report, which are quite approximate and should not be considered a substitute for actual detailed analysis.

5.3 Experience Data

Historical data for recorded discharges is not available for this dam. The maximum discharge to date was calculated to be approximately 6 cfs corresponding to a reported depth of flow over the overflow weir of approximately 3 inches.

5.4 Test Flood Analysis

Recommended Guidelines for the Safety Inspection of Dams by the Corps of Engineers were used for the selection of the "Test Flood". This dam is classified as

a HIGH hazard and INTERMEDIATE size structure. Guidelines indicate that the Probable Maximum Flood (PMF) be used as the test flood for these classifications. The watershed has a total area of 0.02 square miles. Snyder's lag was calculated to be 0.48 hours and a Snyder peaking coefficient of 0.625 was used. The 200 square mile, 24 hour Probable Maximum Precipition (PMF) is 22 inches. The Flood Hydrograph Package, HEC-1 computer program, developed by the Corps of Engineers was utilized to develop the inflow hydrograph, route the flood through the reservoir, and for the dam overtopping analysis. A test flood inflow was calculated to be 98 cfs. The inflow from 1/2 the PMF is 49 cfs. The 12 inch drain was assumed to be closed for this analysis.

The overflow weir capacity is hydraulically adequate to pass the test flood (PMF) and submergence of the overflow weir opening will not occur. The maximum outflow capacity of the overflow weir without submergence is 500 cfs. This corresponds to in excess of 100 percent of the test flood and a storage above the spillway level of approximately 6 ac.-ft. The maximum outflow discharge value for the test flood is 83 cfs corresponding to a depth of flow over the overflow weir of 1.41 feet and a storage above the spillway level of 3 ac.-ft. The outflow from 1/2 the PMF is 40 cfs. A spillway rating curve, outlet works rating curve, and a reservoir surface area-capacity curve are included in Appendix D of this report.

At the overflow weir crest elevation of 361.0, the capacity of the 12 inch drain outlet structure is 16 cfs. It will require approximately 1.5 hours to lower the water level the first foot assuming a water surface area of 2.0 acres and use of the outlet works to regulate the water level for expected inflows. Storage for impending flood conditions can be provided quickly by use of the outlet works if the pool level is high.

5.5 Dam Failure Analysis

This dam is classified as a high hazard structure. Failure discharge will cause damage to the American Can Company building. Loss of personal property is also possible because of the nature of the structure, as it is the north wall of the building. The loss of life is a possibility depending on the occupancy of the garage at the time of failure.

The calculated dam failure discharge is 9430 cfs at a pool level equal to the overflow weir crest. This level was chosen rather than the test flood level as having the greater hazard potential because a prefailure flow of the test flood would cause evacuation and/or a warning of flood conditions. Failure of the dam at normal pool level would catch the building occupants off guard and probably result in greater losses. Failure will produce a water surface level of approximately 3.5 feet deep at the 5th level parking area within the building.

Water surface elevations due to failure of the dam are listed in Appendix D. Probable consequences of a dam failure are limited to American Can Company building.

SECTION 6

EVALUATION OF STRUCTURAL STABILITY

6.1 1 Visual Observations

The maintenance staff routinely checks the equipment which could be used to drain the pond. No signs of physical distress in the north wall of this building is visible.

6.2 Design and Construction Data

The design and construction data available were construction drawings of the entire building, a study of the North Lake repair done in 1972, and structural computations for the north wall. The structural analysis done by Paul Weidlinger is contained in Appendix B of this report. No records or recollections of the construction for this building were readily available.

6.3 Post-Construction Changes

The following changes to the American Can Company Dam facility have been noted since its construction in 1968.

a. Leaking and soil loss through the underdrain system of the foundation drains.

b. Repair of above item by the installation of a plastic liner over the bottom of the pond adjacent to the north wall, and one subsequent repair of the liner.

6.4 Seismic Stability

This dam is in Seismic Zone 1 and, hence, does not require evaluation for seismic stability according to the Corps of Engineers Recommended Guidelines.

SECTION 7

ASSESSMENT, RECOMMENDATIONS AND REMEDIAL MEASURES

7.1 Dam Assessment

a. **Condition:** After study of the available documents, reports, structural analyses, and the results of this inspection, the conclusion is that the general condition of the dam at the American Can Company facility is GOOD. There is no cause to doubt the structural stability of the north wall based on visual observations.

b. **Adequacy of Information:** The information that was available seemed adequate to make an assessment of the condition of this facility.

c. **Urgency:** It is considered that the recommendations suggested below be implemented within 2 years.

7.2 Recommendations

It is recommended that the owner engage a qualified registered engineer to carry out the following actions:

a. The headwall at the outfall of the 48 inch diameter drainline should be rebuilt so that the flow line of this pipe can be observed to monitor sediment buildup.

b. The assumed datum used by the American Can Company should be related to the N.G.V.D.

7.3 Remedial Measures

a. Operation and Maintenance Procedures

1. Trees and brush on the downstream area around the outfall be removed to facilitate the visual observation of this outlet. This would preclude any problem of a possible plugged outlet during an emergency.

2. Schedule a regular maintenance check of this area for monitoring of any blockages.

3. Institute a program of biennial periodic technical inspection.

4. Develop a formal flood warning and surveillance plan, including round-the-clock monitoring during heavy precipitation.

7.4 Alternatives

None.

APPENDIX A

INSPECTION CHECK LIST

INSPECTION CHECK LIST

PARTY ORGANIZATION

PROJECT AMERICAN CAN COMPANY DAM DATE November 13, 1979

TIME 8:30 - 10:00 A.M.

WEATHER Overcast

W.S. ELEV. _____ U.S. _____ DN.S.

PARTY:

1. R. Johnston, JPPA
2. R. Lyon, JPPA
3. G. Salzman, CWDD
4. _____
5. _____
6. V. Lex, Jr., American Can Co.
7. J. Reied, American Can Co.
8. _____
9. _____
10. _____

	PROJECT FEATURE	INSPECTED BY	REMARKS
1.	Hydraulics	R. Johnston	
2.	Structural	R. Lyon	
3.	Geotechnical	G. Salzman	
4.			
5.			
6.			
7.			
8.			
9.			
10.			

INSPECTION CHECK LIST

PROJECT AMERICAN CAN COMPANY DAM DATE November 13, 1979

PROJECT FEATURE _____ NAME _____

DISCIPLINE _____ NAME _____

AREA EVALUATED	CONDITION
DAM EMBANKMENT	North side of building and embankment against building
Crest Elevation	N/A
Current Pool Elevation 361.0	Good - 1/2 inch above overflow weir.
Maximum Impoundment to Date	Approximately 3 inches above overflow weir.
Surface Cracks	None observed.
Pavement Condition	N/A
Movement or Settlement of Crest	None observed.
Lateral Movement	None observed.
Vertical Alignment	Good.
Horizontal Alignment	Good.
Condition at Abutment and at Concrete Structures	Good.
Indications of Movement of Structural Items on Slopes	None observed.
Trespassing on Slopes	Not permitted.
Vegetation on Slopes	None observed.
Sloughing or Erosion of Slopes or Abutments	None observed.
Rock Slope Protection - Riprap Failures	Good - Riprap along pond shore.
Unusual Movement or Cracking at or near Toes	None observed.
Unusual Embankment or Downstream Seepage	None observed.
Piping or Boils	None observed.
Foundation Drainage Features	Footing drains.
Toe Drains	None observed.
Instrumentation System	Piezometer in foundation drain reads dry.

INSPECTION CHECK LIST

PROJECT AMERICAN CAN COMPANY DAM DATE November 13, 1979

PROJECT FEATURE _____ NAME _____

DISCIPLINE _____ NAME _____

AREA EVALUATED	CONDITION
OUTLET WORKS - INTAKE CHANNEL AND INTAKE STRUCTURE	
a. Approach Channel	Entire pond bed - underwater.
b. Intake Structures	
12 inch drain	Screened, free access from the bottom of the pond. Also, free access from one 2 ft. square opening in each side of a catch basin located in the pond over the 12 inch drain.
8 Inch Fire Protection. (Two Separate systems)	Free access from one 2 ft. square opening in each side of a catch basin located in the pond, near the building, one at each edge.
Overflow Weir	(See Spillway Weir)

INSPECTION CHECK LIST

PROJECT AMERICAN CAN COMPANY DAM DATE November 13, 1979

PROJECT FEATURE _____ NAME _____

DISCIPLINE _____ NAME _____

AREA EVALUATED	CONDITION
OUTLET WORKS - TRANSITION AND CONDUIT	
12 Inch Drain	Extends from intake to a vertical chase where it enters the building on third garage level. Controlled by gate valve. Visible portions in good condition and apparently operable.
8 Inch Fire Protection Lines.	Various valves, pipes, pumps and other appurtenances within building. Visible portions in good condition and apparently operable.
Overflow Weir.	Discharges directly to the vertical chase.
Vertical Chase.	A 3 ft. by 8 ft. vertical concrete chase extends from the overflow weir to a junction box below the fifth garage level. A 48 inch RCP extends from the junction box, under the building, to a drop manhole in front of the building. The 48 inch RCP continues to the outlet.

INSPECTION CHECK LIST

PROJECT AMERICAN CAN COMPANY DAM DATE November 13, 1979

PROJECT FEATURE _____ NAME _____

DISCIPLINE _____ NAME _____

AREA EVALUATED	CONDITION
OUTLET WORKS - SPILLWAY WEIR, APPROACH AND DISCHARGE CHANNELS	
a. Approach Channel	N/A
General Condition	
Loose Rock Overhanging Channel	
Trees Overhanging Channel	
Floor of Approach Channel	
b. Weir	Overflow weir - concrete with steel weir plate.
General Condition	Good.
Rust or Staining	Normal rusting of steel.
Spalling	None observed.
Any Visible Reinforcing	None observed.
Any Seepage or Efflorescence	Weir flowing - none observed.
Drain Holes	None observed.
c. Discharge Channel	48 inch pipe outlet.
General Condition	Good.
Loose Rock Overhanging Channel	None observed.
Trees Overhanging Channel	Yes.
Floor of Channel	Grass and gravel.
Other Obstructions	Pipe culvert 400 ft. downstream.

APPENDIX B

ENGINEERING DATA

APPENDIX B-1

DESIGN, CONSTRUCTION AND MAINTENANCE RECORDS AND LOCATION

Mr. Victor J. Galgowski
Dam Safety Engineer
Water and Related Resources Unit
Department of Environmental Protection
State of Connecticut
State Office Building
Hartford, Connecticut 06115

American Can Company
American Lane
Greenwich, Connecticut 06830

STRUCTURAL COMPUTATIONS

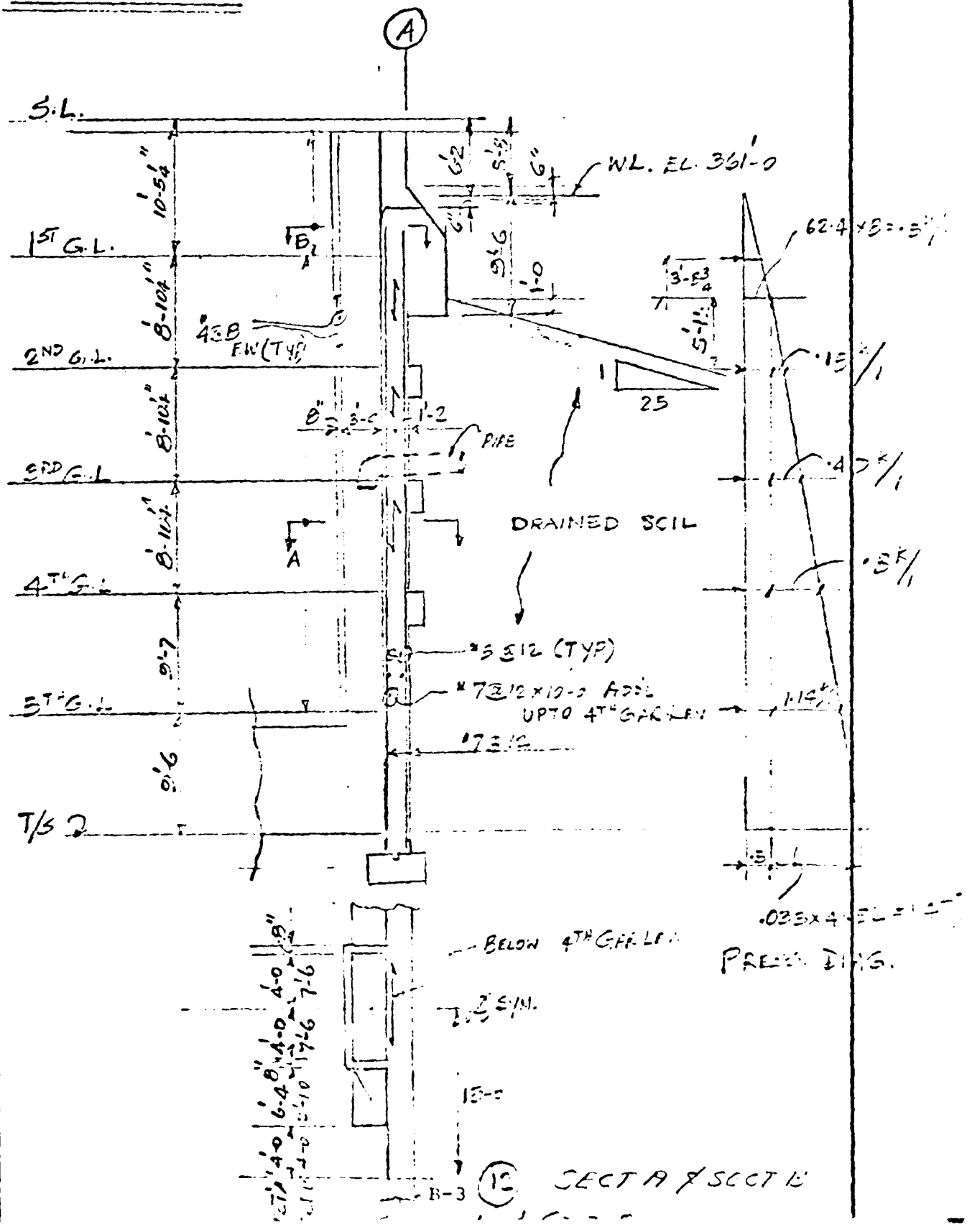
AS CONTAINED IN CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FILES

PAUL WEIDLINGER – CONSULTING ENGINEER NEW YORK, N. Y. CAMBRIDGE, MASS.

DATE
BY
NO.
OF

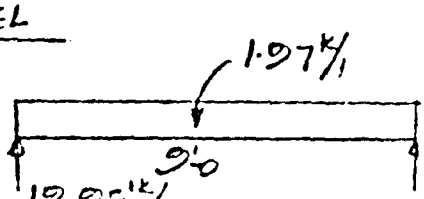
7114 | American Can Co.

NORTH WALL ELEV A11 & A12



NORTH WALL (CONT'D)

BELOW 5TH GAR. LEVEL



$M = 1.97 \times \frac{9^2}{8} = 19.95$ 'k/'

$A_s = \frac{19.95}{1.76 \times 12.5} = .9080"$

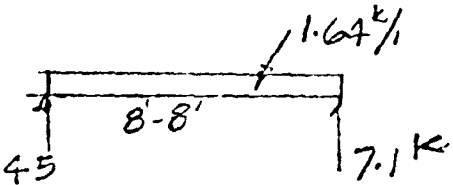
#5 @ 12 + '7 3/12

$A_s = .910"$

V = [illegible]

$v = \frac{8.88}{12 \times 7.3}$ = .0[illegible]

BELOW 4TH GAR. LEVEL



$M = 1.64 \times \frac{8.67^2}{8} = 15.45$

$A_s = .702$

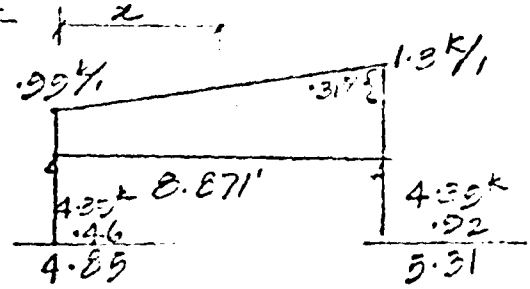
#5 @ 12 + '7 3/12

V = 7.1 < 9.3 k/'
= 3[illegible]k

$v = \frac{34}{8 \times 4.7}$ = .0[illegible]

#[illegible] STIRR[illegible]

BELOW 3RD GAR. LEVEL



$.99x + \frac{.31}{8.871} \times x \times \frac{x}{2} = 4.35$

$x^2 + 56x - 274 = 0$ $\quad x = 4.5'$

$M = 4.89 \times 4.5 = 21.9$ 'k

$- .99 \times 4.5^2/2 = - 10.05$

$- \frac{.31}{8.871} \times \frac{4.5^3}{2 \times 3} = - .53$

11.32

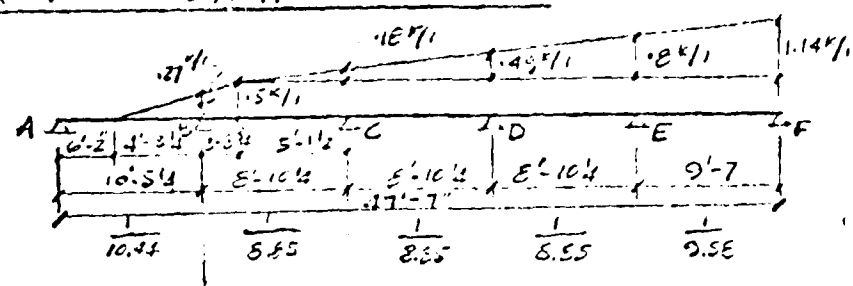
$A_s = \frac{11.32}{1.76 \times 12.5} = .514$ #7 @ 12 E.F. 9K

8" CONC WALL

Min. $A_s = 12 \times 8 \times .0025 = .24"$

USE #4 @ 9" E.W.

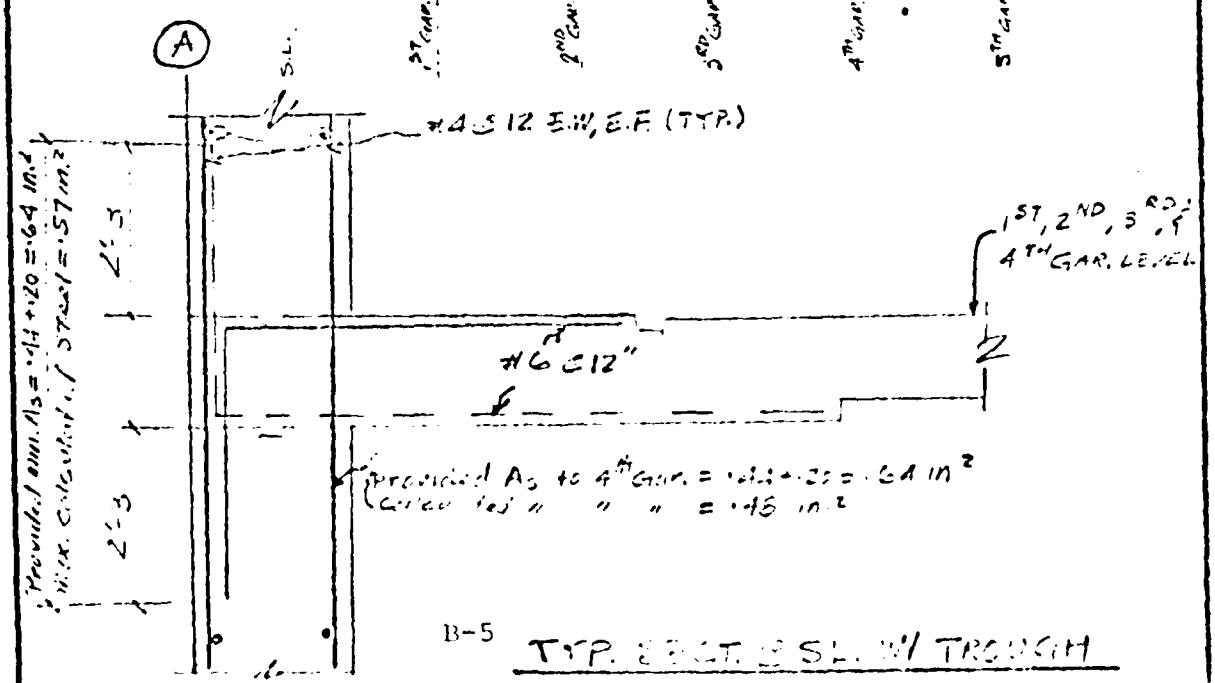
STEEL FOR WALL STRIP 1'-0" WIDE :



$\frac{I}{L}$	$\frac{1}{10.44}$	$\frac{1}{8.45}$	$\frac{1}{8.35}$	$\frac{1}{8.55}$	$\frac{1}{9.58}$
Rel. Stiffness	$\frac{3}{4}\times1=.75$	1.15	1.15	1.15	$\frac{3}{4}\times1.09=.82$
Distr. factors	.4 .6	.5 .5	.5 .5	.6 .4	
FEM	+.6 -3.6	+4.5 -5.3	+5.7 -7.2	+7.6 -16.7	
	+1.2 +1.8	+.4 +.4	+.7 +.8	+4.6 +3.5	
	0 +.2	+.9 +.4	+.2 +1.3	-.4 >	
	-.1 -.1	-.6 -.7	-.8 -.7	-.2 -.2	
M^- (ft-kips)	+1.7 -1.7	+5.2 -5.2	+5.9 -5.6	+12.4 -12.4	
M simple bm	.4	4.9	5.1	11.2	16.8
Correction	-.8	-3.5	-5.3	-9.1	-6.2
$M^+_{midspan}$ (ft-kips)	-.4	+1.4	-2.8	-2.1	+10.6
Req'd $A/E = \frac{M}{1.76\times12.5}$ (in^2)	.03	.24	.26	.57	
" A_s^+ (in^2)	.02	.06	.13	.09	.43

Min. WALL REINF. (HORIZ'L) = $.0025\times12\times14$ = .40 in^2 (OR .20 in^2 E.F.)
" " " (VERT'L) = $.0015\times12\times14$ = .26 in^2 (OR .13 in^2 E.F.)

Provided A_s^- (in^2)	.44	.64	.64	.64	
" A_s^+ (in^2)	.20	.20	.20	.20	.64

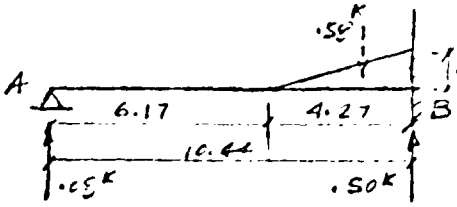


TYP. E.W.T. @ S.L. W/ TROUGH

FEM & SIMPLE BEAM MOMENT CALC'S

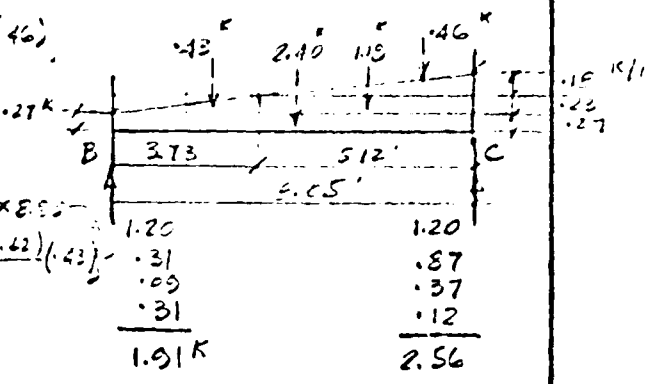
$$\bar{M}_{BA} = .58 \times 1.33 \times 9.06 \frac{9.06+16.44}{2\times16.44} = .6^{IK}$$

$$M^+ = .05 \times \frac{16.44}{2} = .4^{IK}$$



$$\bar{M}_{BC} = \frac{.27\times5.55^2}{12} + \left[\frac{5.55^2(4-2\times.58)}{12}(1.15) + \frac{.58^2(5-3\times.58)}{30}(.46)\right.$$
$$\left. + .42(10-10\times.42+3\times.42^2)\frac{.42}{15}\right]5.55$$
$$= 1.8 + [.1 + 0 + .1]5.55 = 3.6^{IK}$$

$$\bar{M}_{CB} = \frac{.27\times5.55^2}{12} + \left[\frac{.58(6-5\times.58+3\times.58^2)}{12}(1.15)\right.$$
$$\left. + \frac{.58(10-10\times.58+3\times.58^2)}{30}(.46) + \frac{.42^2(5-4\times.42)}{10}(.42)\right]5.55$$
$$= 1.8 + [.2 + .1 + 0]5.55 = 4.5^{IK}$$

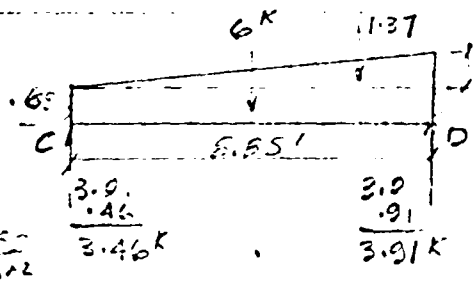


$$M^+ = 1.91\times\frac{5.55}{2} - 1.20\times\frac{5.55}{4} - .43\times1.93 - .54\times.7\times.7/2$$
$$= 5.3 - 2.7 - .8 - .1 = 4.9^{IK}$$

$$\bar{M}_{CD} = \frac{.60\times5.55^2}{12} + \frac{1}{15}\times1.37\times5.55 = 1.5 + .8 = 2.3^{IK}$$

$$\bar{M}_{DC} = 1.5 + \frac{1}{12}\times1.37\times5.55 = 1.5 + .7 = 2.2^{IK}$$

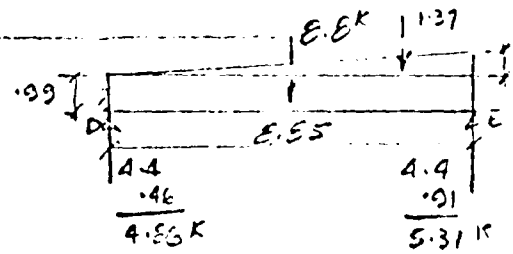
$$M^+ = 3.46\times\frac{5.55}{2} - 3\times\frac{5.55}{4} - \frac{.31}{2}\times\frac{1}{2}\times\frac{5.55}{3}\times\frac{5.55}{3\times2}$$
$$= 9.6 - 5.2 - .3 = 4.1^{IK}$$



$$\bar{M}_{DE} = \frac{.99\times5.55^2}{12} + .5 = 2.5 + .5 = 3.0^{IK}$$

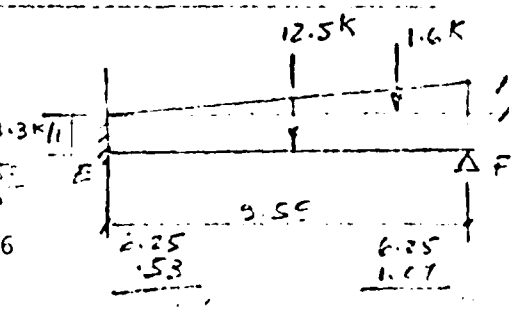
$$\bar{M}_{ED} = 2.5 + .7 = 3.2^{IK}$$

$$M^+ = 4.56\times\frac{5.55}{2} - 4.4\times\frac{5.55}{4} - 1.0$$
$$= 12.7 - 6.1 - 1.0 = 5.6^{IK}$$



$$\bar{M}_{EF} = \frac{1.3}{5}\times.95\times5.55^2 + \frac{7}{60}\times1.6\times5.55$$
$$= 14.9 + 1.8 = 16.7^{IK}$$

$$M^+ = 6.75\times\frac{5.55}{2} - 6.25\times\frac{5.55}{4} - \frac{.7}{2}\times\frac{5.55}{2}\times\frac{5.55}{3}$$
$$= 22.5 - 15.6 - .7 = 6.2^{IK}$$



BEAM DES. FOR WALL SPANNING IN VERT'L DIRECTION @ OPEN'G

Assume Plate action exists & the loading given on P. 5EF will be distributed evenly among the floors when load is transferred in vertical direction.

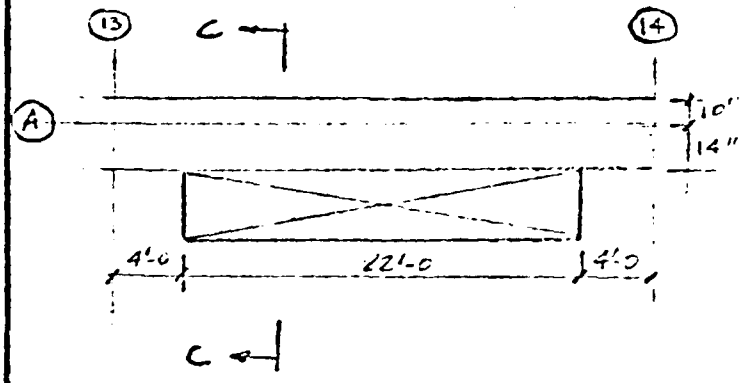
total lateral earth load = $\frac{1.14 \times 32.42}{2}$ = 18.5 K

" water load = $.5(32.42 + \frac{5.5}{2})$ = 15.3 K

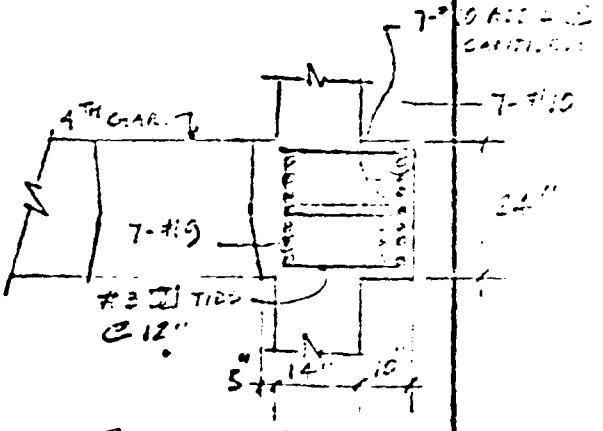
36.8 K

Avg. unif. load = $\frac{36.8}{47.58}$ = .77 K/l per lin strip

w = lateral load @ 4TH GAR. = $.77\left(\frac{8.33 + 3.33}{2}\right)$ = 7.1 K/l



TYP'L OPEN'G



SECT. C-C

Reqd min. $M_R^+ = .235 \times 12 \times 27$ = 420 IK

$M^- = \frac{7.1 \times 22^2}{10}$ = 344 $A_s^- = \frac{344}{1.76 \times 26}$ = 7.5 in.² 7-#10

$M^+ = \frac{7.1 \times 22^2}{14}$ = 245 IK $A_s^+ = \frac{245}{1.76 \times 27}$ = 5.2 in.² 7-#9

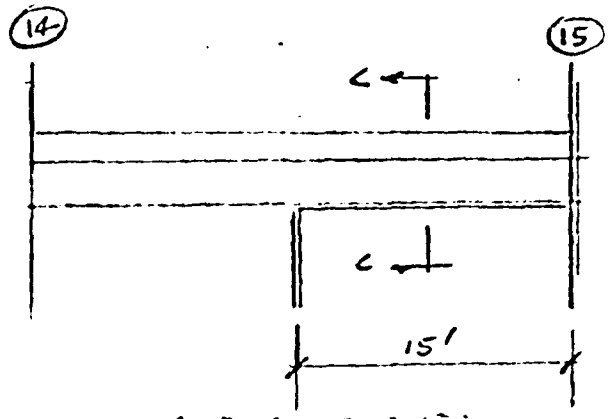
$V = \frac{11 \times 7.1}{24 \times 26}$ = 12.5 PSI

$V_d = \frac{6.5 \times 7.1}{24 \times 26}$ = 99 − 70 = 29 "

For #3, [] TIES $s = \frac{2 \times .11 \times 60}{24 \times 29}$ = 12.7"

∴ USE #3 [] TIES @ 12 TYP'L

7114 AMERICAN CAN CO.



BM @ CANTILEVER

$M^- = \frac{7.1 \times 15^2}{2} = 800^{IK}$

$A_s^- = \frac{800}{1.76 \times 26} = 17.5 \text{ in.}^2$ 14 - #10

APPENDIX B-2

COPIES OF PAST INSPECTION REPORTS

No. _____ WATER RESOURCES COMMISSION
SUPERVISION OF DAMS
INVENTORY DATA

Inventoried By _____

Date 9/25/73

Name of Dam or Pond North Lake (Elmer Bill Co

Code No. 628

Nearest Street Location Bedford Road

Town Greenwich Long 73-43.3

U.S.G.S. Quad. Glenville Lat. 41-06.0

Name of Stream _____

Owner American Can

Address _____

Pond Used For Landscape SA 0.05 SM

Dimensions of Pond: Width _____ Length _____ Area 4A

Total Length of Dam 330' Length of Spillway 7'

Location of Spillway center

Height of Pond Above Stream Bed 35'

Height of Embankment Above Spillway 10'

Type of Spillway Construction _____

Type of Dike Construction _____

Downstream Conditions Town

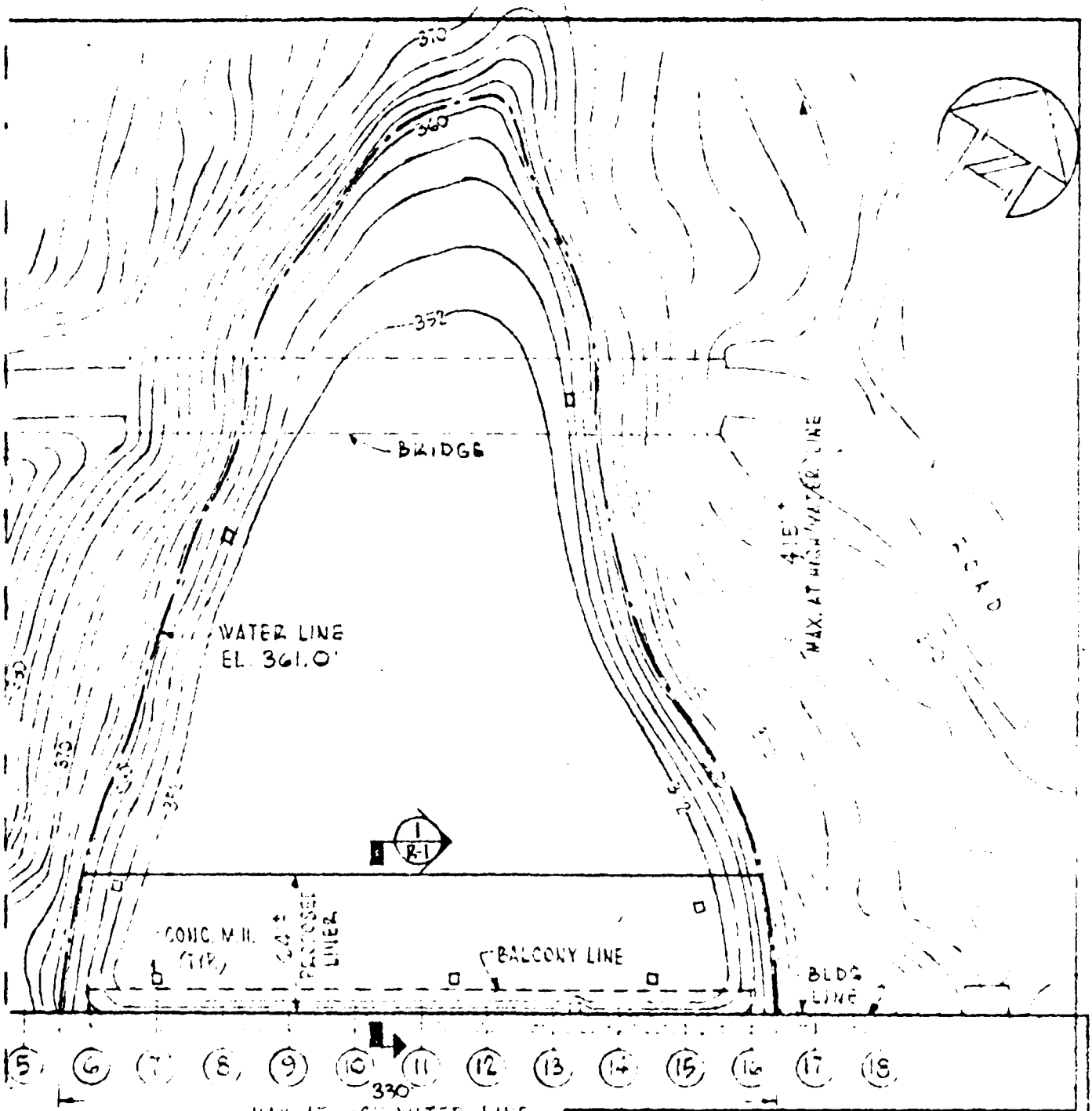
Summary of File Data _____

Remarks 9/25/73 dike is north side of office dam appears safe (RA)

Would Failure Cause Damage? _____ Class _____

APPENDIX B-3

RECORD DRAWINGS AND SKETCHES



LAKE PLAN

(VERIFY DIMENSIONS & CONDITIONS IN FIELD)

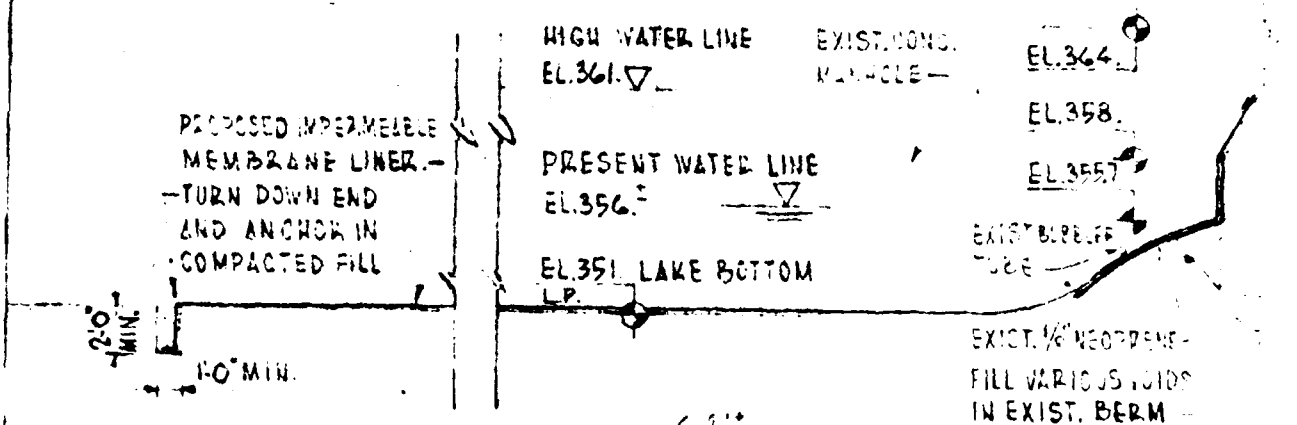
NORTH LAKE REPAIR
AMERICAN CAN COMPANY
GREENWICH, CONN

AMERICAN CAN COMPANY
ENGINEERING CENTER
1900 POLLITT DRIVE
FAIR LAWN, NEW JERSEY

DRAWN BY T. J. CAMLET
DATE 3-11-72
SCALE

B-12

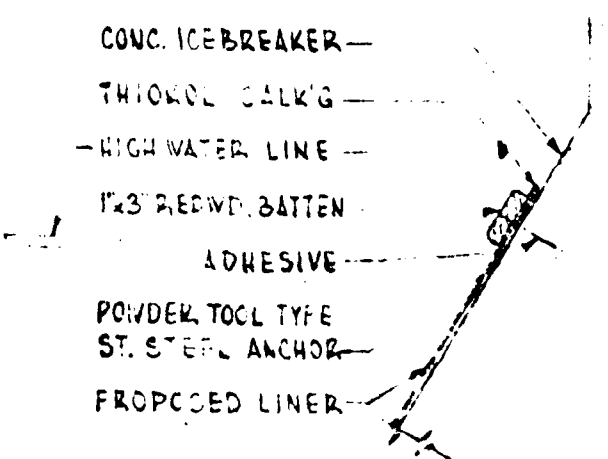
R-1



SECTION

1/R-1

SCALE: 1/8" = 1'-0"



DETAIL

1/R-2

SCALE: 1½"=1'-0"

B-13

NORTH LAKE REPAIR

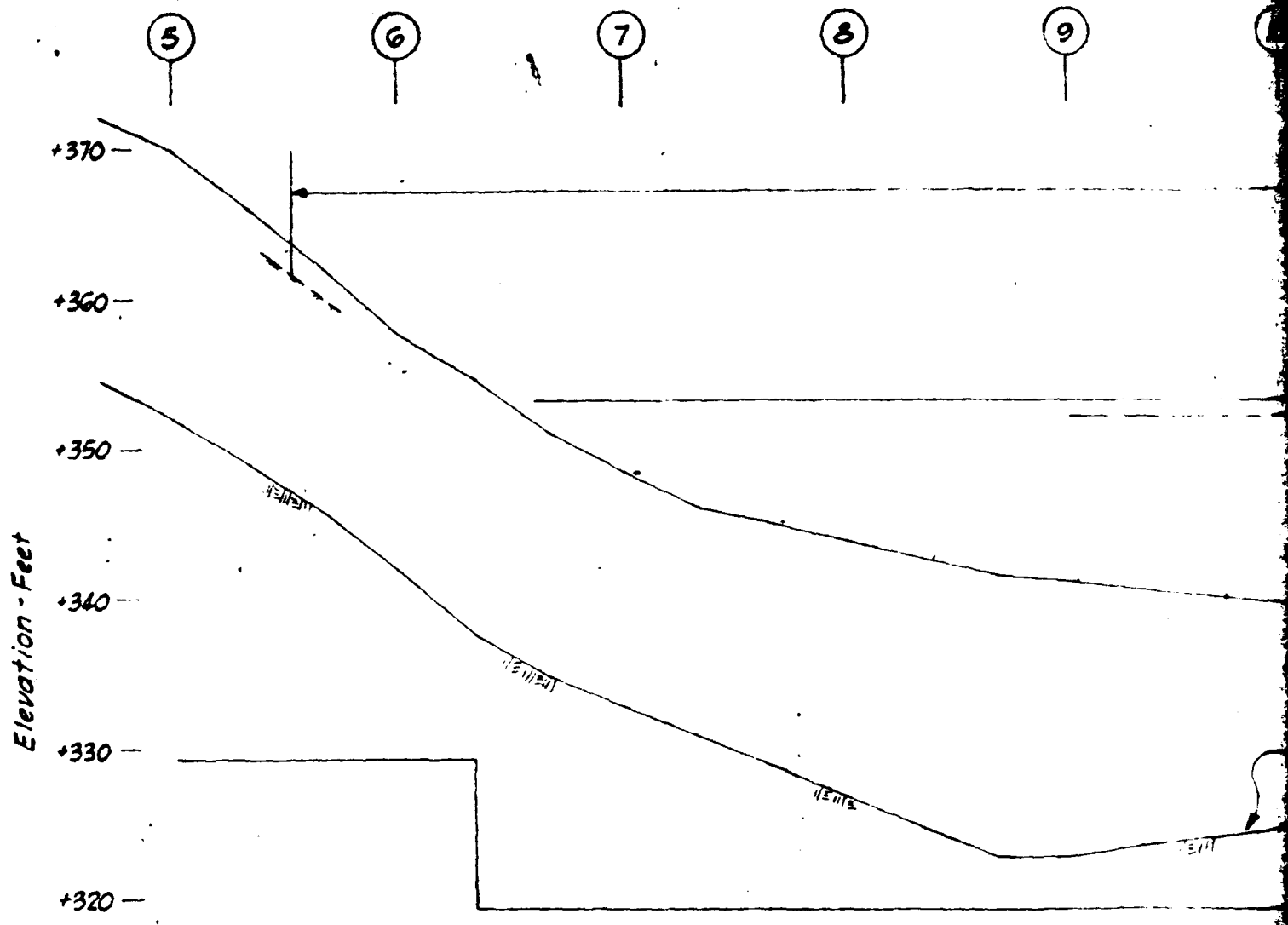
AMERICAN CAN COMPANY

GREENWICH, CONN.

AMERICAN CAN COMPANY
ENGINEERING CENTER
1900 POLLITT DRIVE
FAIR LAWN NEW JERSEY

DRAWN BY J.J. CAMLET
DATE 9-11-72
SCALE

DWG. NO. R-2

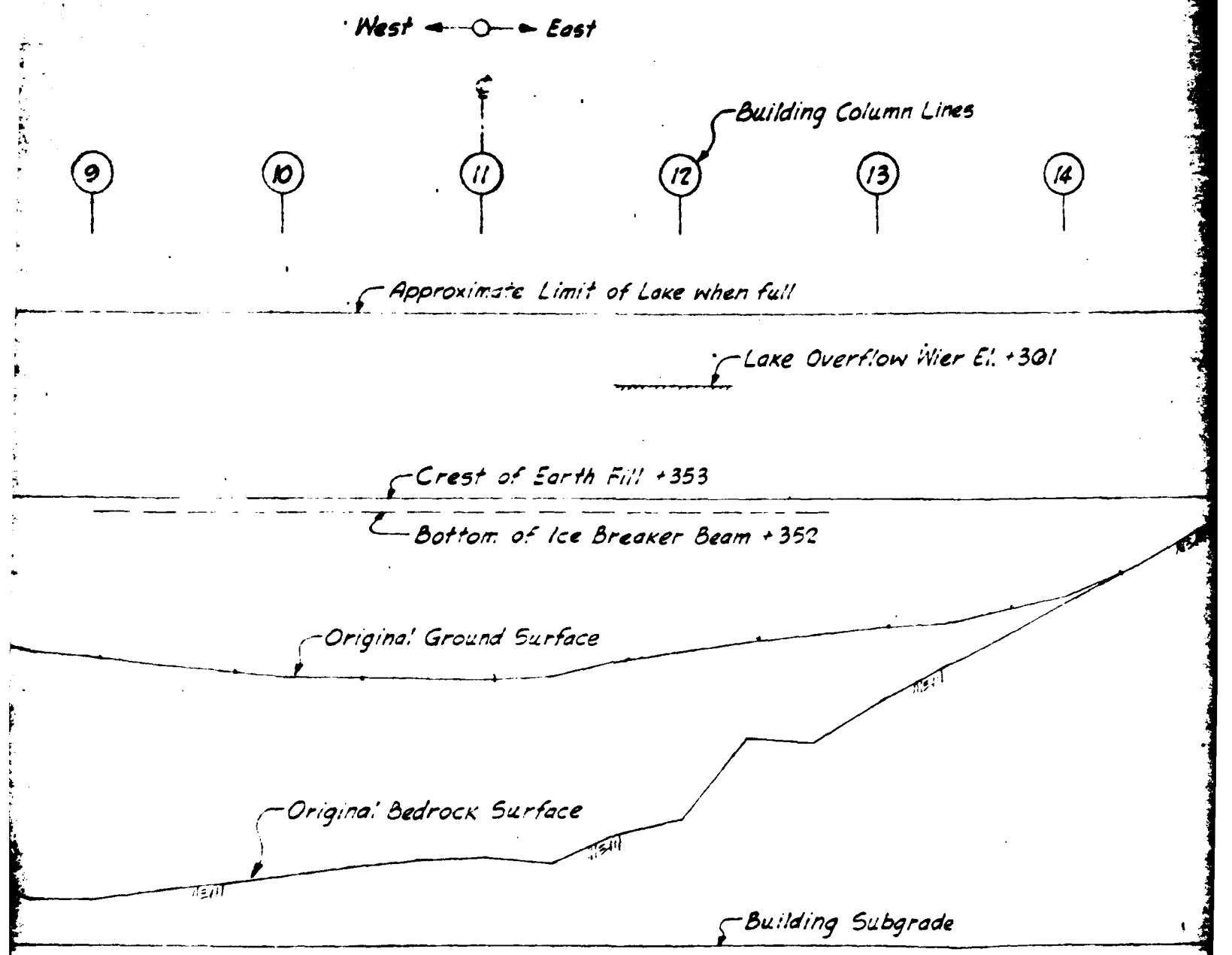


Graphic

Horiz.

Vert.

NOTE:
Ground
subgrade
Construc
Building
and "NW



Graphic scales:

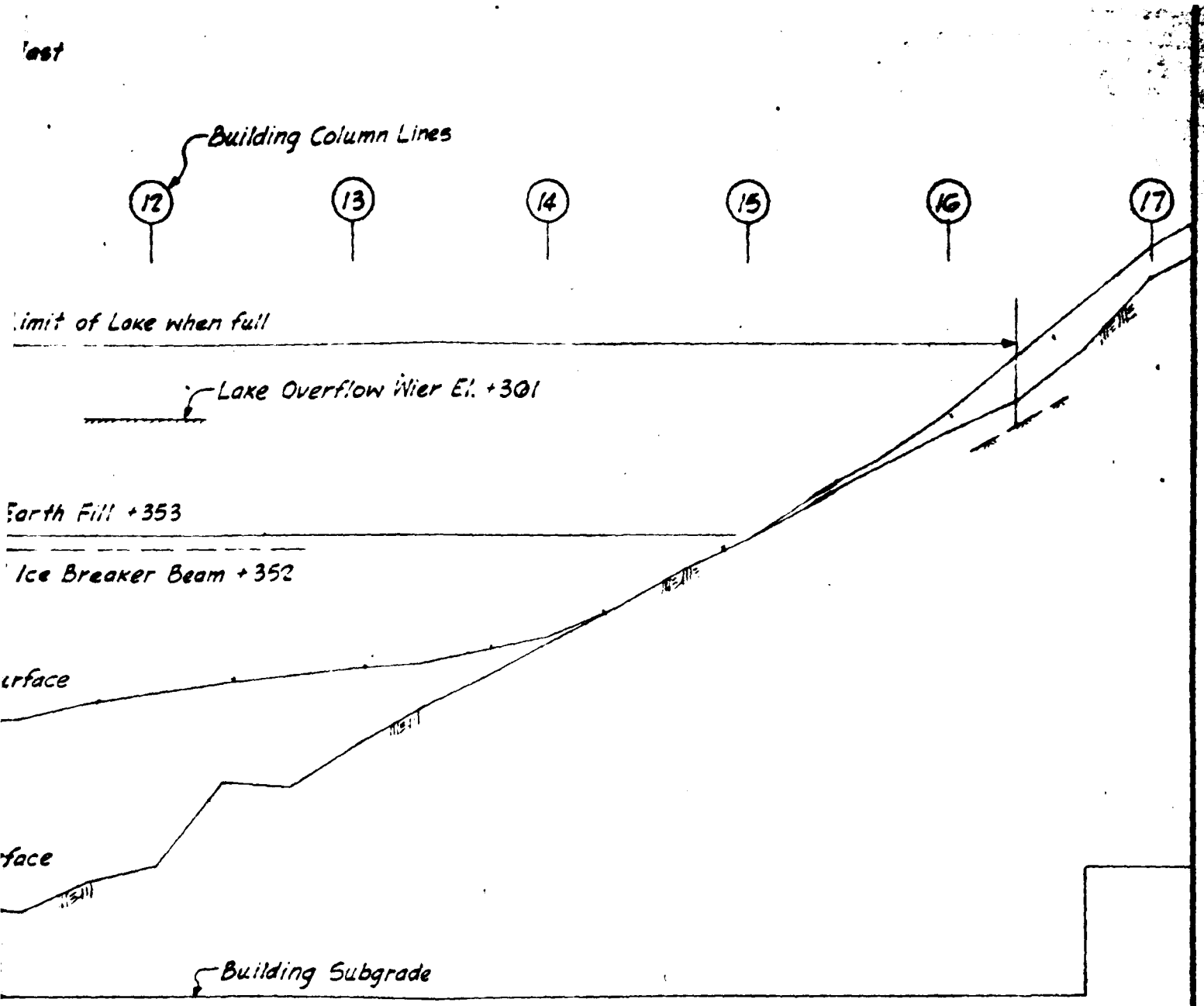
Horiz. 0' 20' 40' 60'

Vert. 0' 10' 20' 30'

NOTE:

Ground surface, bedrock surface and building subgrade data taken from drawings by Turner Construction Company titled "Rock Excavation, Building Site, NE Quadrant", dated Jan. 17, 1968; and "NW Quadrant", dated Feb. 26, 1968.

SHEET REDU
NOT TO SC



60'

30'

ce and building
gs by Turner
Rock Excavation,
ted Jan. 17, 1968;
26, 1968.

SHEET REDUCED
NOT TO SCALE

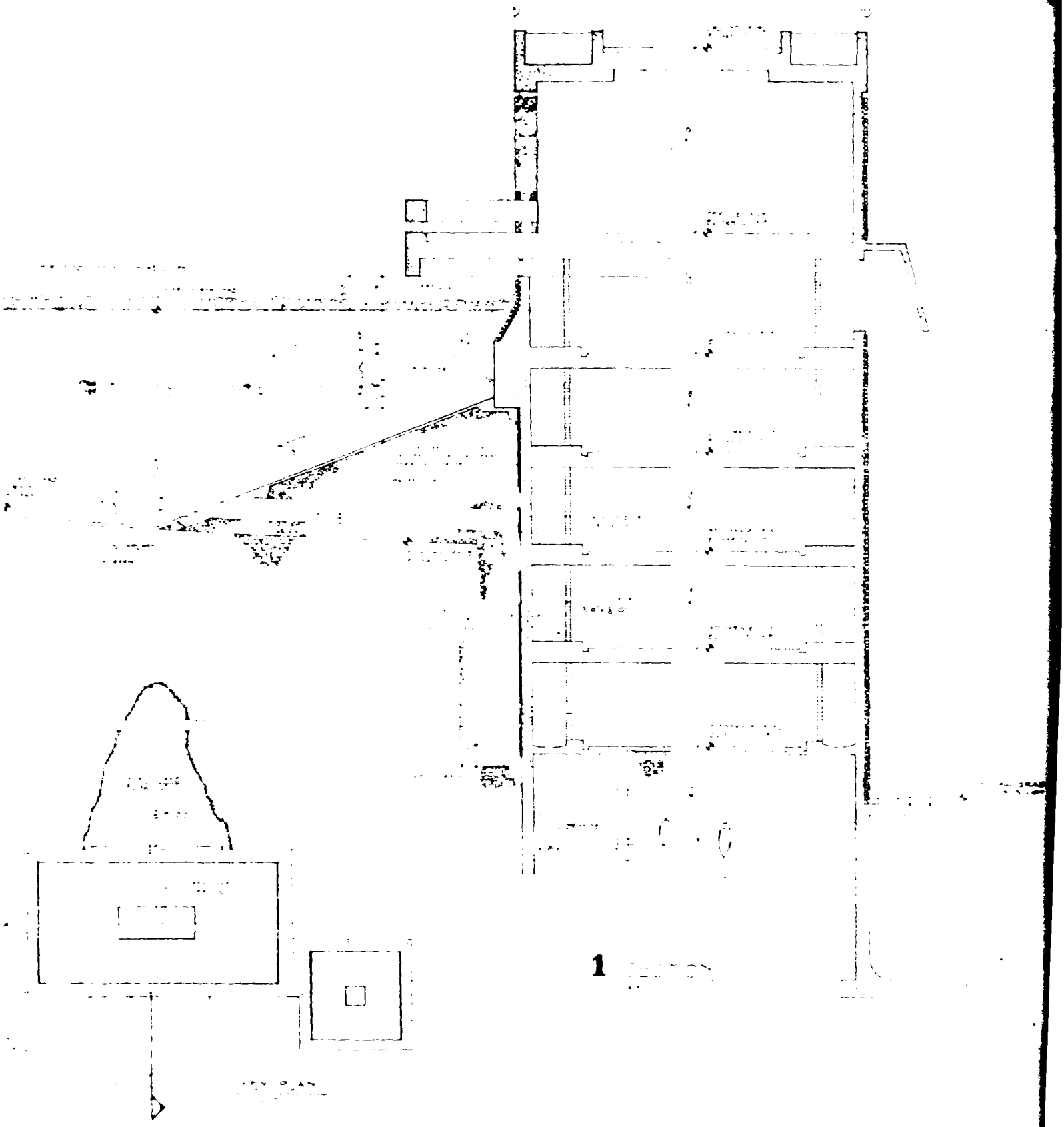
NORTH LAKE REPAIR
AMERICAN CAN COMPANY
GREENWICH CONNECTICUT

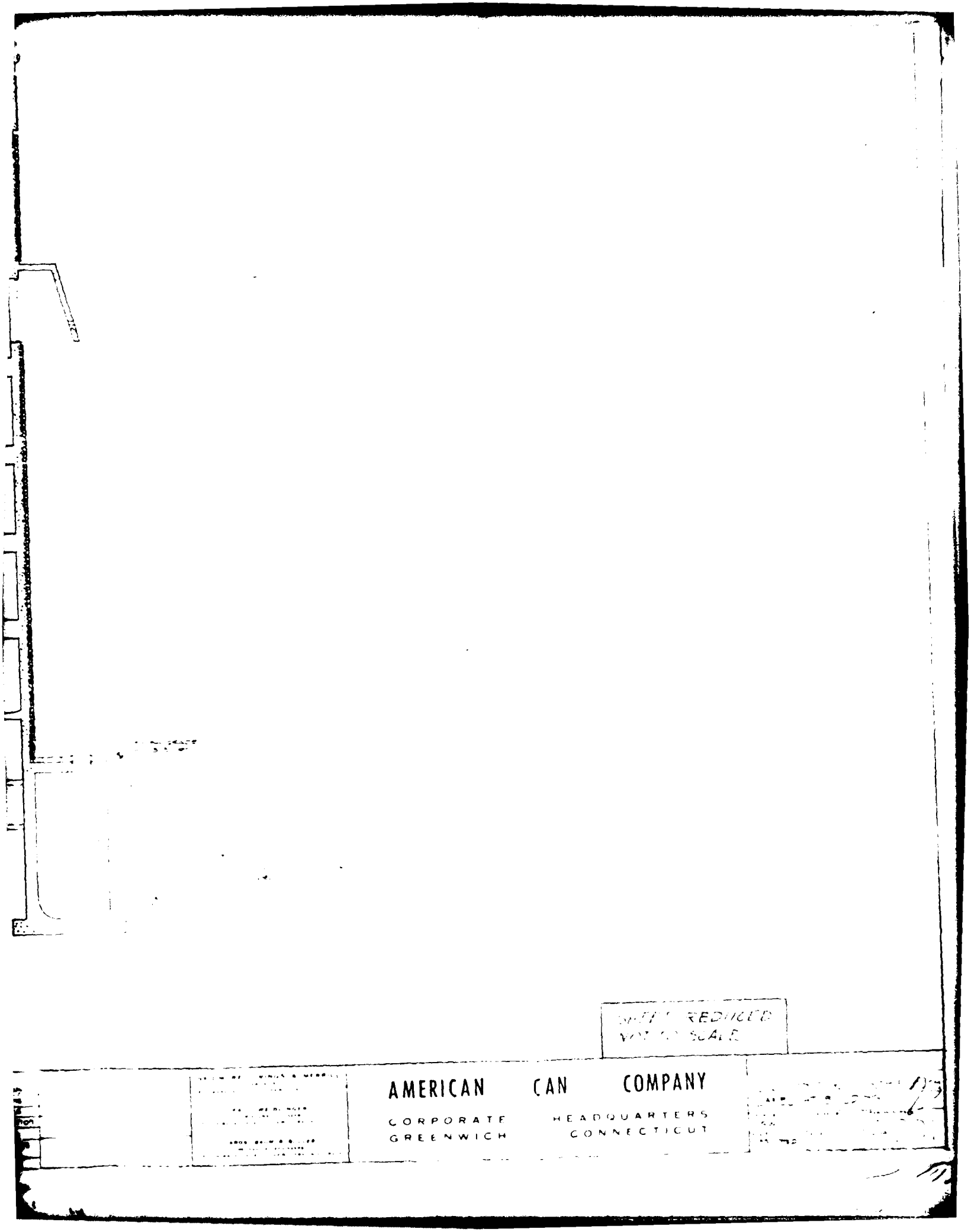
MUNDER • RUTLEDGE • WENTWORTH & JOHNSTON
CONSULTING ENGINEERS
630 MADISON AVE., NEW YORK, N.Y. 10017

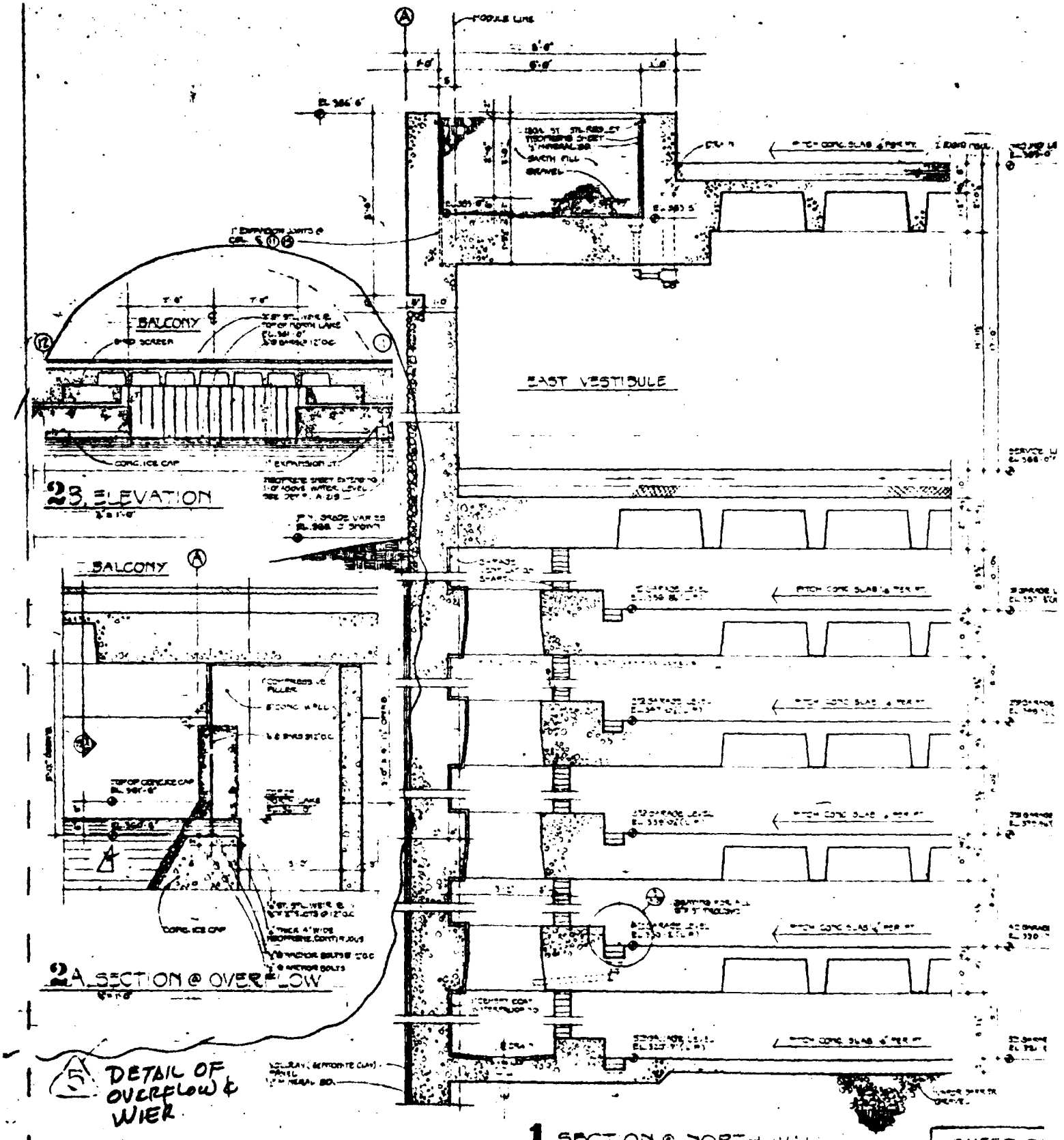
SCALE	MADE BY HRC DATE 1-24-68	FILE NO
AS NOTED	CHKD BY PMC DATE 1-31-72	4122

SECTION ALONG NORTH FACE OF BUILDING

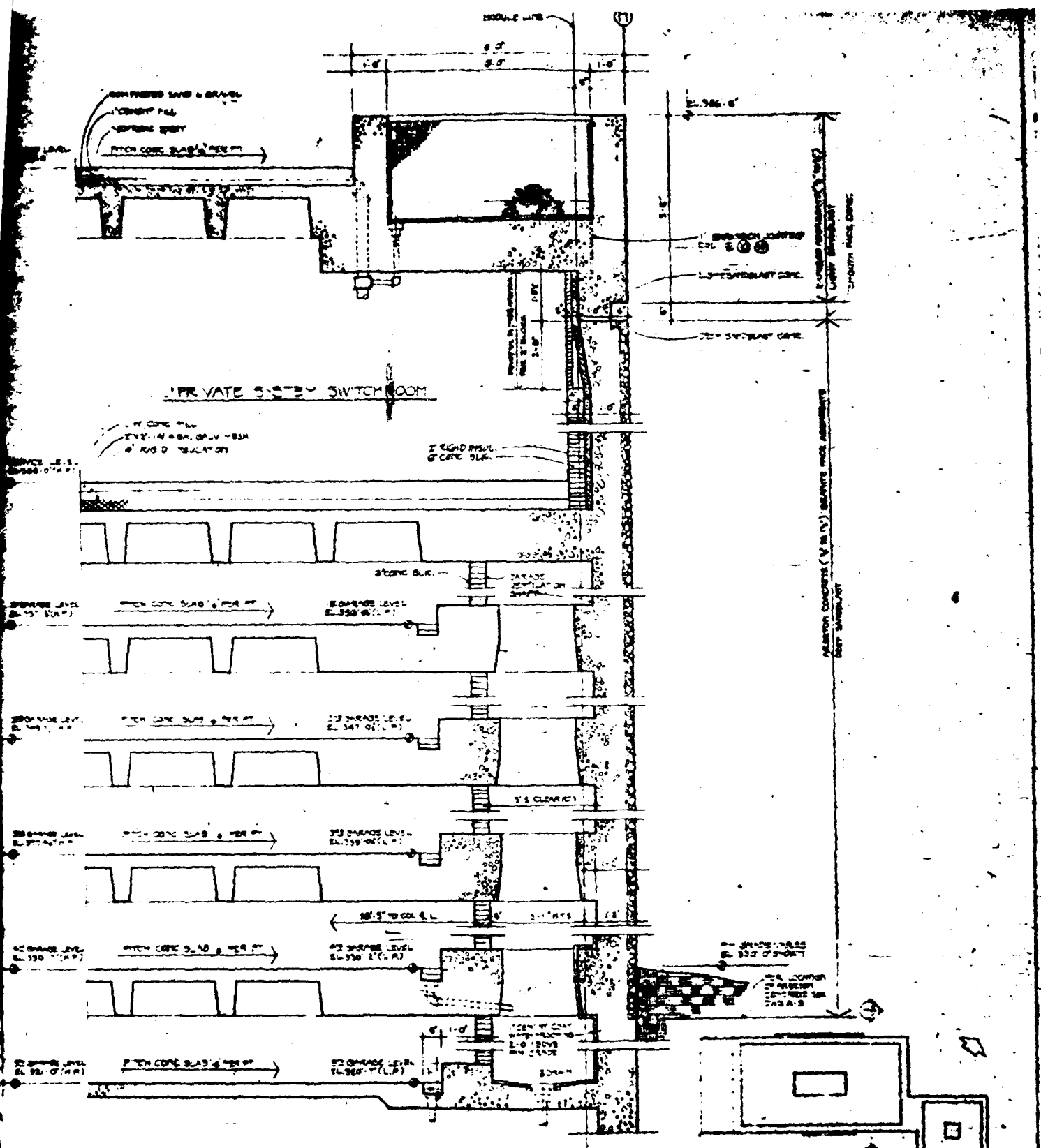
DRAWING NO. 2




SHEET REDUCED
NOT TO SCALE
AMERICAN CAN COMPANY
CORPORATE HEADQUARTERS
GREENWICH CONNECTICUT



SHEET RI
NOT TO SC



T REDUCED
TO SCALE

2 SECTION @ SOUTH WALL

KEY PLAN

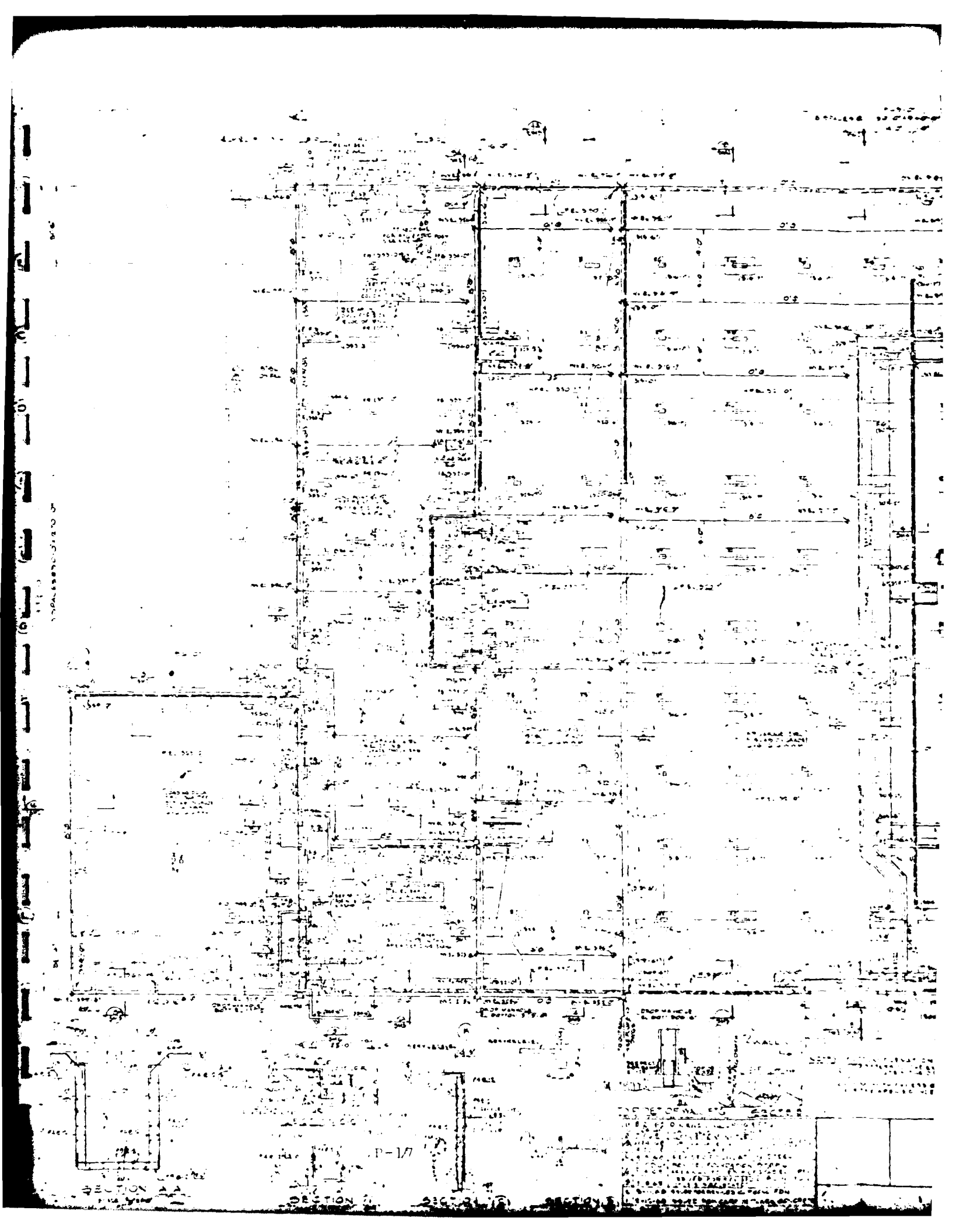
SKIDMORE, OWINGS & MERRILL

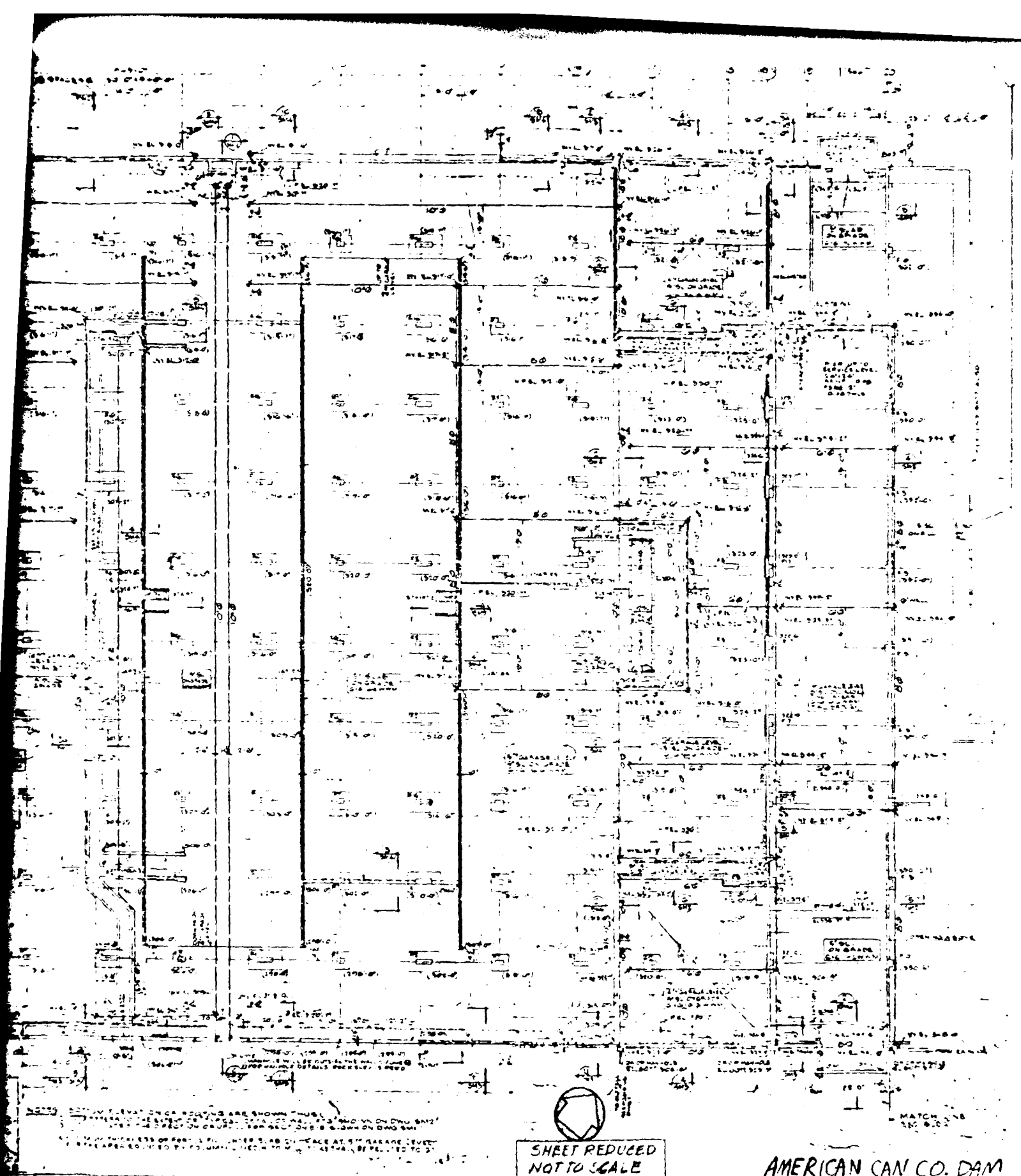
AMERICAN CAN COMPANY

CORPORATE HEADQUARTERS
GREENWICH CONNECTICUT

ENTRY DR WALL SECTIONS

A-201


SECTION AA
SECTION
SECTION



SHEET REDUCED
NOT TO SCALE

SKIDMORE OWINGS & MERRILL

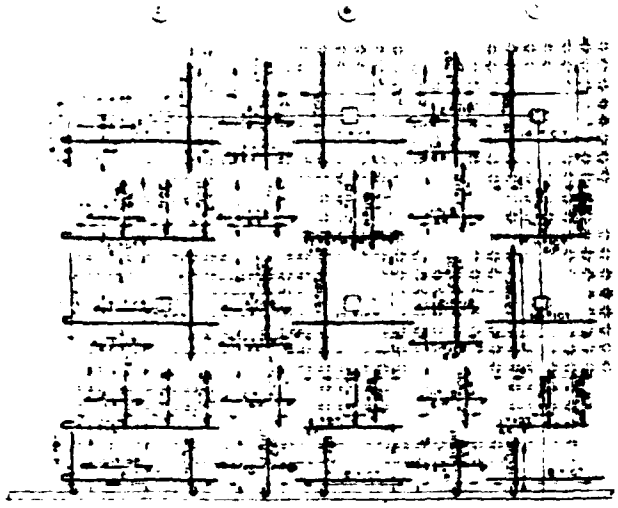
PAUL WEIDLINGER

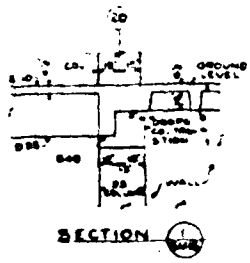
JAMES RAUM & BOLLES

AMERICAN CAN COMPANY

CORPORATE HEADQUARTERS
GREENWICH CONNECTICUT

AMERICAN CAN CO. DAM
GREENWICH
FOUNDATION PLAN

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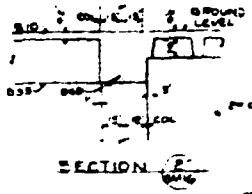
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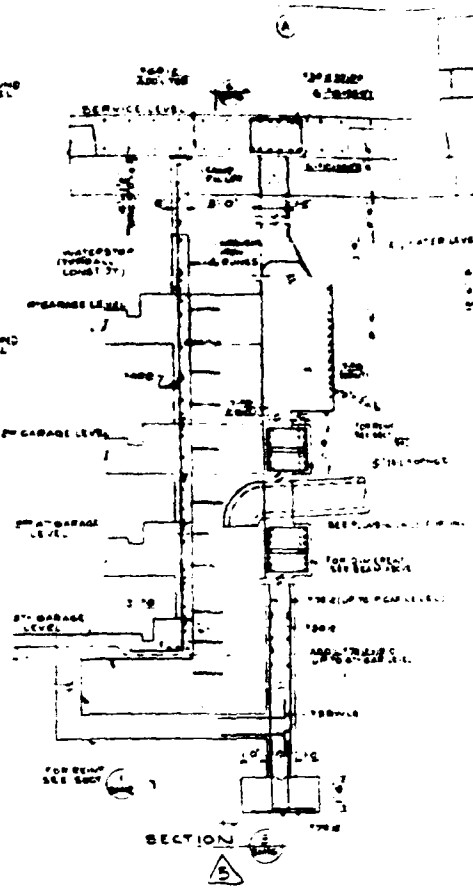
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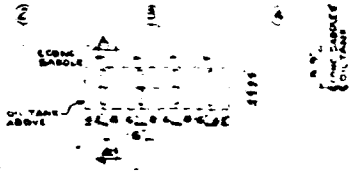

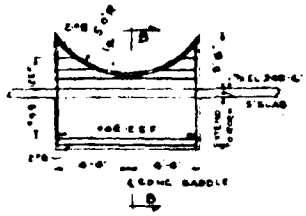
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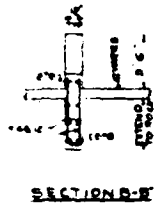
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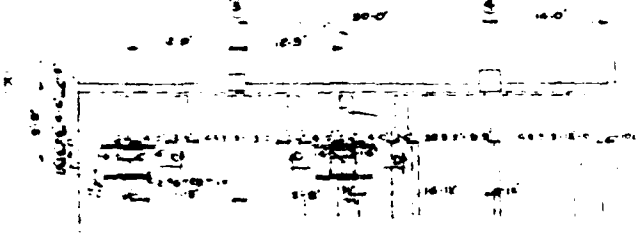

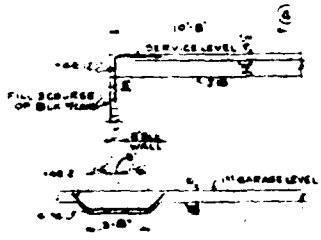
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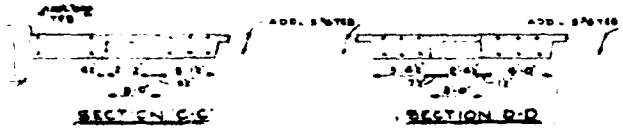
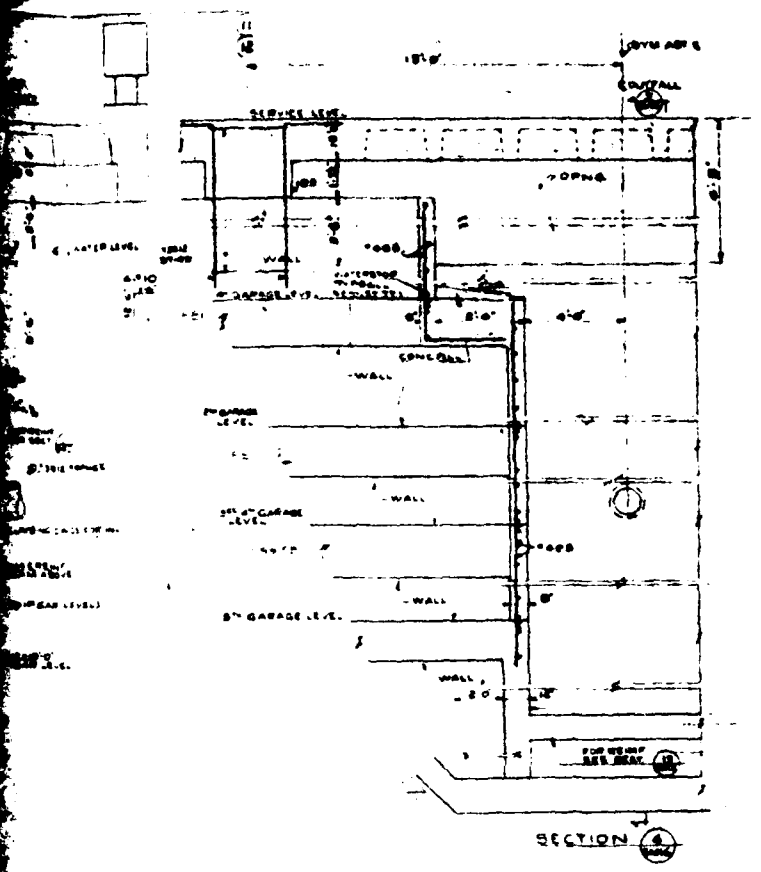

SECTION C-C
SECTION D-D



SHEET REDUCED
NOT TO SCALE

SKIDMORE OWINGS & MERRILL

AMERICAN CAN COMPANY

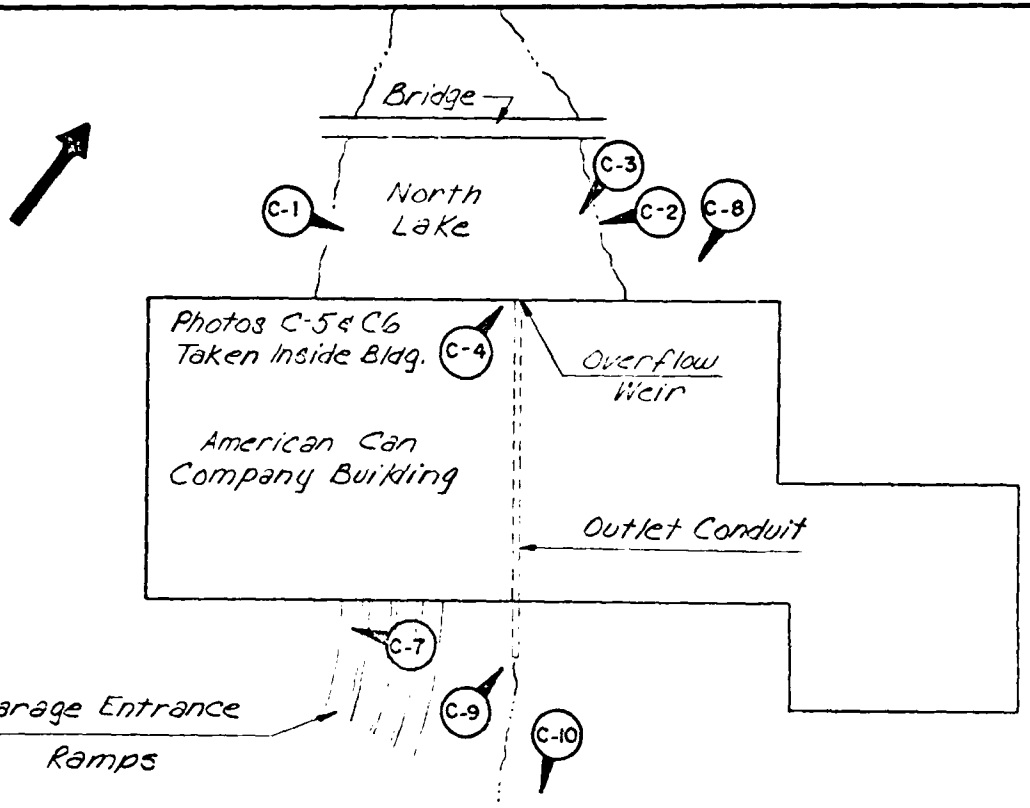
CORPORATE HEADQUARTERS
GREENWICH CONNECTICUT

PART PLAN

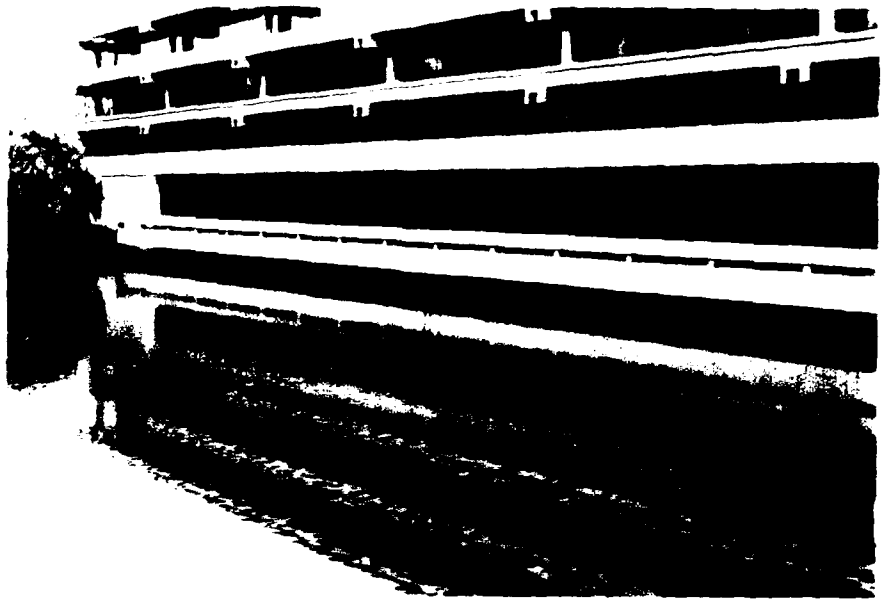
SM 16

APPENDIX C

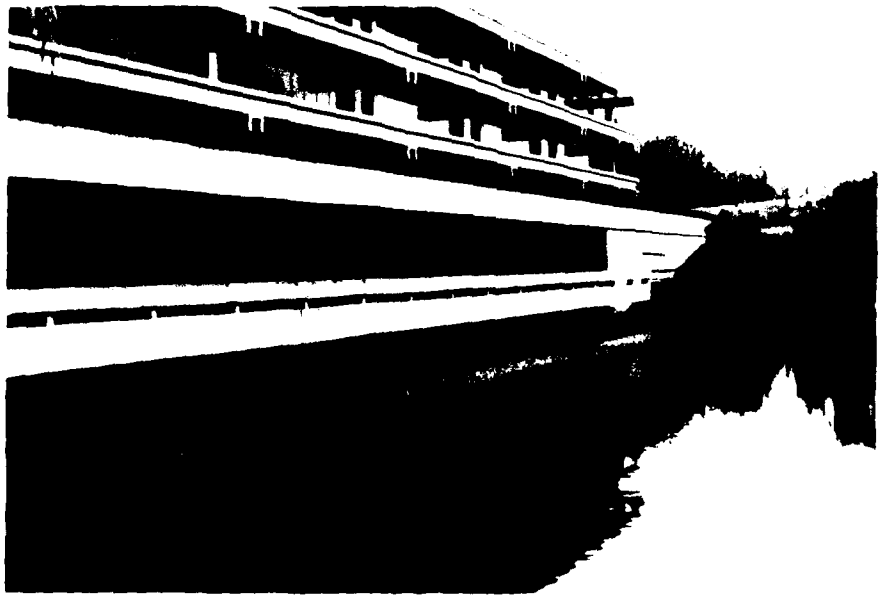
PHOTOGRAPHS



AMERICAN CAN COMPANY DAM
PHOTO INDEX



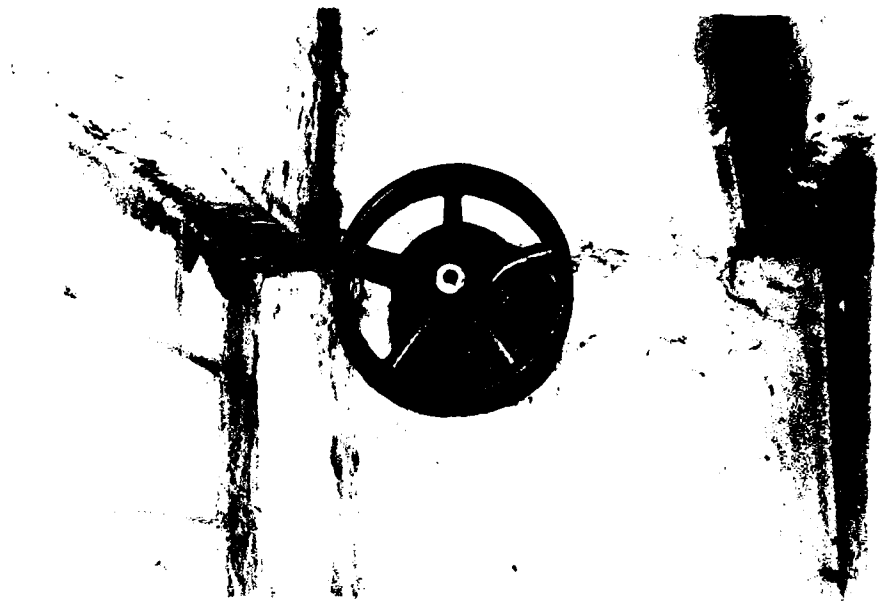
C-1 NORTH FACE OF BUILDING - LOOKING AT EAST ABUTMENT



C-2 NORTH FACE OF BUILDING - LOOKING AT WEST ABUTMENT

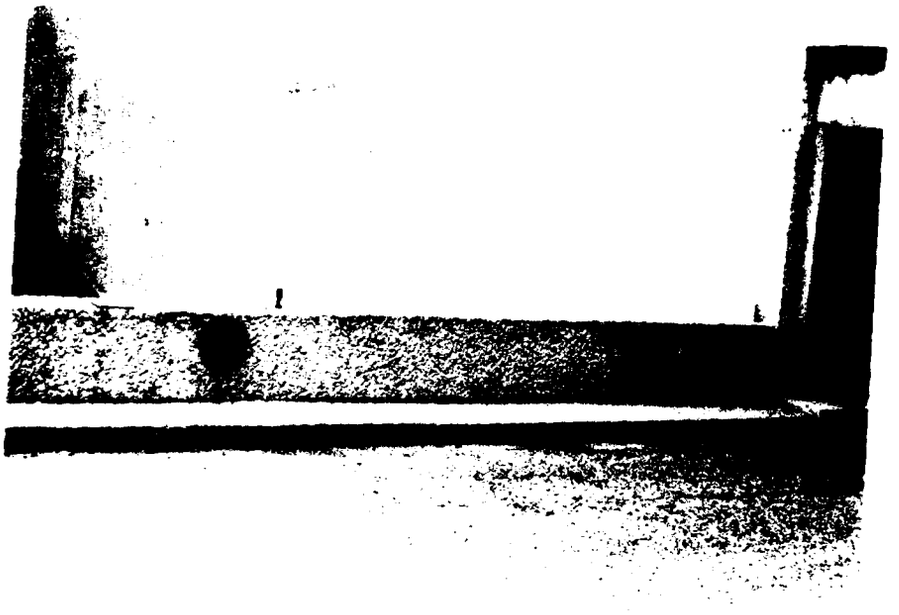
C-3 OVERFLOW WEIR

C-4 OVERFLOW WEIR - LOOKING FROM INTERIOR OF BUILDING

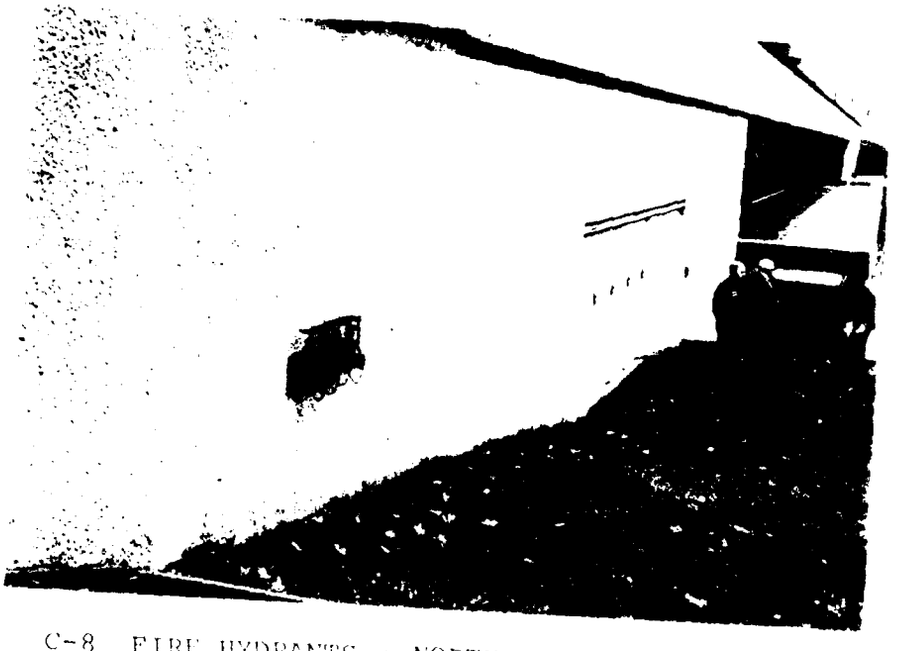


C-5 GATE VALVE CONTROL FOR 12 INCH DRAIN

C-6 PIEZOMETER IN FIFTH GARAGE LEVEL



C-7 FIRE HYDRANTS - SOUTH SIDE OF BUILDING



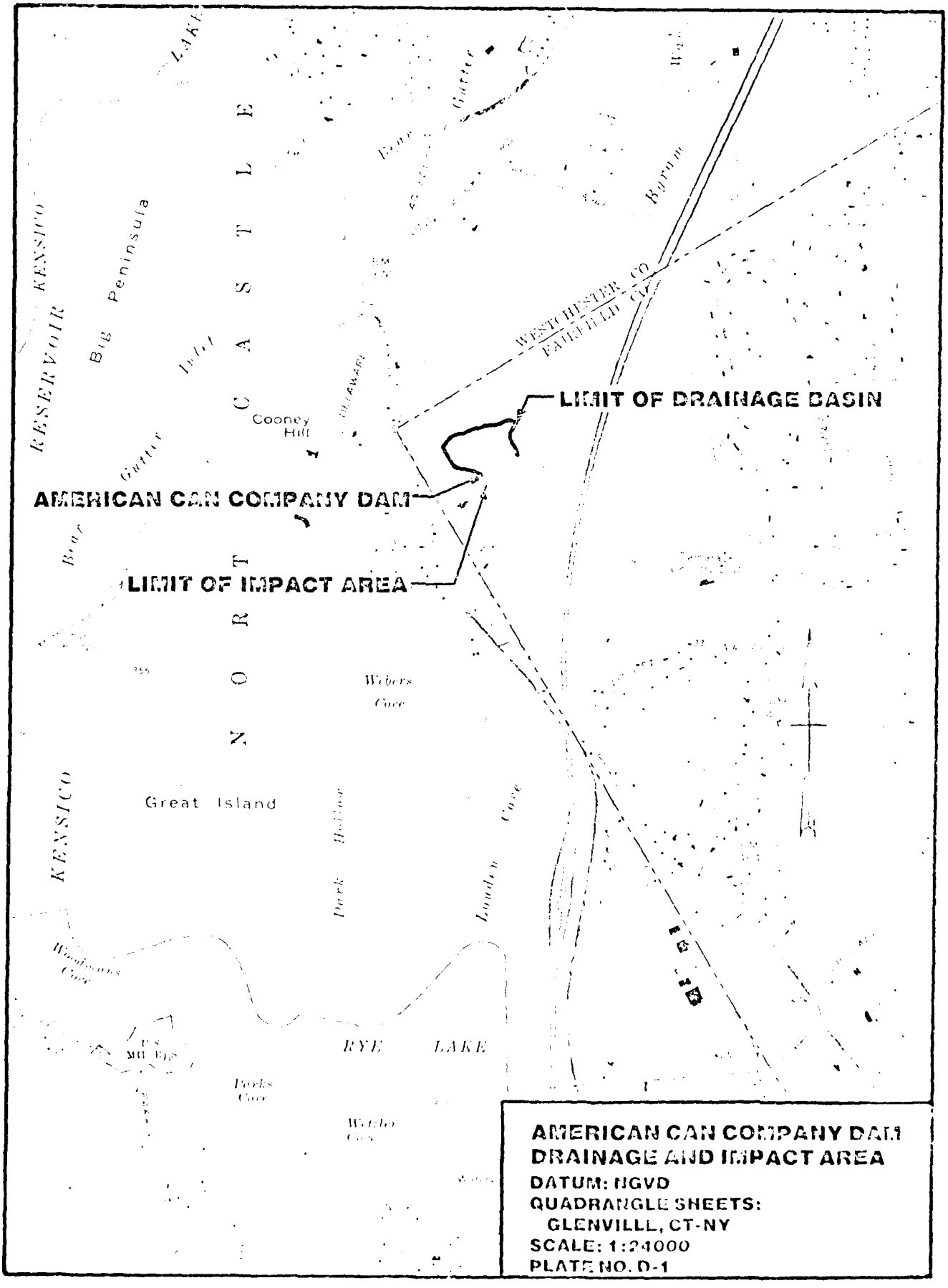
C-8 FIRE HYDRANTS - NORTH SIDE OF BUILDING

C-9 48 INCH R.C.P. OUTLET

C-10 DISCHARGE CHANNEL FOR 48 INCH R.C.P. OUTLET

APPENDIX D

HYDROLOGIC AND HYDRAULIC COMPUTATIONS


LIMIT OF DRAINAGE BASIN
AMERICAN CAN COMPANY DAM
LIMIT OF IMPACT AREA
Cooney Hill
Great Island
RYE LAKE
NORTH CASTLE
KENSICO RESERVOIR
Big Peninsula
Bear Gutter
Byram
WESTCHESTER CO
FAIRFIELD CO
Weber Cove
Loudon Cove
Parks Cove
Park Harbor
AMERICAN CAN COMPANY DAM
DRAINAGE AND IMPACT AREA
DATUM: NGVD
QUADRANGLE SHEETS:
GLENVILLE, CT-NY
SCALE: 1:24000
PLATE NO. D-1

HYDROLOGIC AND HYDRAULIC ANALYSIS
SUMMARY SHEET

Dam American Can Company Dam

Test Flood PMF

INFLOW HYDROGRAPH DEVELOPMENT

Drainage Area 0.02 sq. mi.

Probable Maximum Precipation
24 hour - 200 square mile PMP 22 inches

Initial Railfall Loss 0 Inch
Uniform Railfall loss .1 Inch

Snyder's Lag .48 hours
Snyder's Peaking Coefficient .625

Test Flood Inflow 98 CFS

PMF Inflow 98 CFS

RESERVOIR ROUTING AND DAM OVERTOPPING

Test Flood Outflow 83 CFS

Spillway Capacity at Top of Dam 500 CFS
More than 100 % of Test Flood

Flow Over Spillway at Test Flood 83 CFS

Spillway Crest Elevation 361.0 Feet
Top of Dam Elevation 365.6 Feet
Test Flood Elevation 362.4 Feet

```
**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION      JULY 1978
 LAST MODIFICATION  26 FEB 79
**********
    1                A1      DAM SAFETY ANALYSIS-JOB NO. 79-905/ 04-EHJ
    2                A2      AMERICAN CAN COMPANY DAM-GREENWICH-CONN.
    3                A3      12-03-74    TEST FLOOD = PMF
    4                N     150         0        20         0         0         0         0         2         0         0
    5                N1      5
    6                J       1         2         1
    7                J1    .5       1.0
    8                K       0         1         0         0         0         0         1         0
    9                K1        COMPUTATION OF PMF-DEVELOPMENT OF INFLOW HYDROGRAPH
   10                M       1         1       .02         0       .02         0         0         0         1
   11                P       0        22       110       124       133       142
   12                T       0         0         0         0         0         0         0        .1
   13                W     .44      .625
   14                X       0       .05       2.0
   15                K       1         1         0         0         0         0         1
   16                K1        ROUTING INFLOW HYDROGRAPH THRU LAKE-OVERTOPPING ANALYSIS
   17                Y       0         0         0         1         1
   18                Y1      1         0         0         0         0         0        -1
   19                $A    2.0       2.1       2.2       2.4       2.7
   20                $E   361.      362.      364.      366.      370.
   21                $$   361.        15      3.33       1.5
   22                $D365.63      3.33       1.5       .01
   23                K      99
```

OVERVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS
END OF NETWORK

```
**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION      JULY 1978
 LAST MODIFICATION  26 FEB 79
**********

RUN  DATE= 12/04/79.
     TIME= 13.27.53.
```

DAM SAFETY ANALYSIS-JOB NO. 79-905/ 04-ERJ
AMERICAN CAN COMPANY DAM-GREENWICH-CONN.
12-03-79 TEST FLOOD - PMF

JOB SPECIFICATION

NQ	NHR	NMIN	IDAY	IHR	IMIN	METRC	IPLT	IPRT	NSTAN
150	0	20	0	0	0	0	2	0	0
			JOPER	NXT	LROPT	TRACE			
			5	0	0	0			

MULTI-PLAN ANALYSES TO BE PERFORMED
NPLAN= 1 NRTIO= 2 LRTIO= 1
RTIOS= .50 1.00

********** ********** ********** ********** **********

SUB-AREA RUNOFF COMPUTATION

COMPUTATION OF PMF-DEVELOPMENT OF INFLOW HYDROGRAPH

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDG	IUNG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	.02	0.00	.02	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	22.00	110.00	124.00	133.00	142.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS .800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	0.00	.10	0.00	0.00

UNIT HYDROGRAPH DATA
TP= .48 CP= .63 NTA= 0

RECESSION DATA
STRTQ= 0.00 QRCSN= .05 RTIOR= 2.00
APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 1.58 AND R= 1.15 INTERVALS

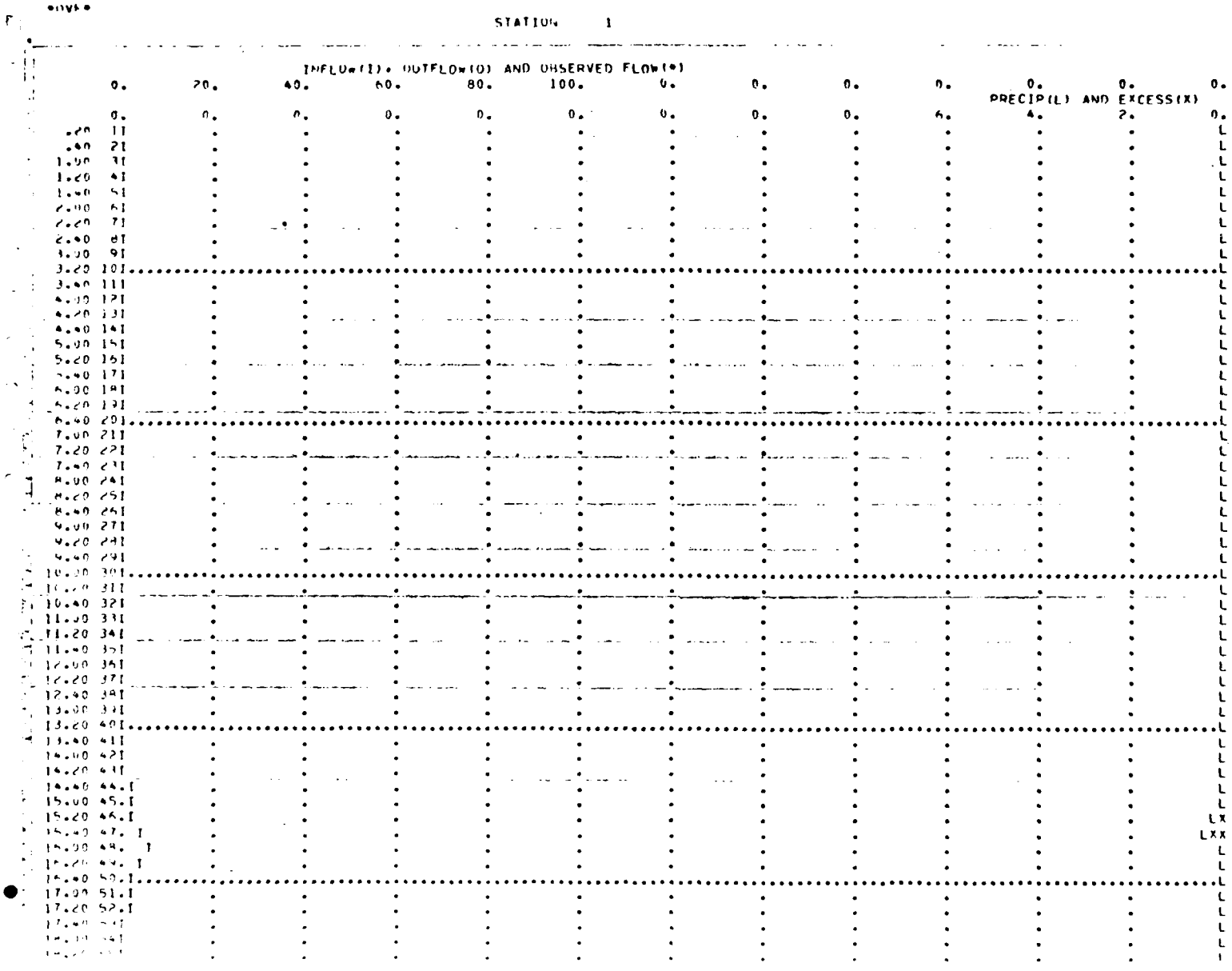
UNIT HYDROGRAPH 7 END-OF-PERIOD ORDINATES, LAG= .48 HOURS, CP= .62 VOL= 1.00
0. 15. 10. 4. 1. 1. 0.

END-OF-PERIOD FLOW

HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q

1.01	22.20	67	.00	0.00	.00	0.	1.02	23.20	142	.05	.02	.03	1.
1.01	22.40	68	.00	0.00	.00	0.	1.02	23.40	143	.05	.02	.03	1.
1.01	22.60	69	.00	0.00	.00	0.	1.03	0.00	144	.05	.02	.03	1.
1.01	22.80	70	.00	0.00	.00	0.	1.03	.20	145	0.00	0.00	0.00	1.
1.01	23.00	71	.00	0.00	.00	0.	1.03	.40	146	0.00	0.00	0.00	0.
1.02	.20	72	.00	0.00	.00	0.	1.03	1.00	147	0.00	0.00	0.00	0.
1.02	.20	73	.04	.00	.03	0.	1.03	1.20	148	0.00	0.00	0.00	0.
1.02	.40	74	.04	.00	.03	0.	1.03	1.40	149	0.00	0.00	0.00	0.
1.02	1.00	75	.04	.00	.03	0.	1.03	2.00	150	0.00	0.00	0.00	0.
									SUM	24.99	21.72	3.27	838.
										(635.)	(552.)	(83.)	23.73)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	98.	39.	11.	6.	838.
CMS	3.	1.	0.	0.	24.
INCHES		18.13	20.92	21.65	21.65
MM		460.59	531.46	549.87	549.87
AC-FT		19.	22.	23.	23.
THOUS CU M		24.	28.	28.	28.


STATION 1
INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)
0. 20. 40. 60. 80. 100. 0. 0. 0. 0. 0. 0. 0.
PRECIP(L) AND EXCESS(X)
0. 0. 0. 0. 0. 0. 0. 0. 0. 6. 4. 2. 0.

•OVN•

HYDROGRAPH AT STA 1 FOR PLAN 1• RTIO 1

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	1.	1.	1.	2.	3.	2.	1.
1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	2.	2.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	4.	8.
19.	12.	13.	14.	15.	16.	17.	21.	38.	49.
37.	25.	20.	17.	15.	14.	11.	6.	2.	1.
1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49.	19.	6.	3.	419.
CMS	1.	1.	0.	0.	12.
INCHES		9.07	10.46	10.82	10.82
MM		230.29	265.73	274.93	274.93
AC-FT		10.	11.	12.	12.
THOUS CU M		12.	14.	14.	14.

HYDROGRAPH AT STA 1 FOR PLAN 1• RTIO 2

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.	1.	1.	1.	1.	2.	4.	5.	4.	2.
2.	1.	1.	1.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.	2.	3.	4.	4.	4.	4.	4.	4.	4.
4.	4.	4.	4.	4.	4.	4.	4.	8.	16.
21.	23.	26.	28.	30.	33.	35.	41.	76.	98.
74.	50.	40.	35.	30.	27.	21.	11.	5.	2.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	0.	0.	0.	0.	0.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	98.	39.	11.	6.	838.
CMS	3.	1.	0.	0.	24.
INCHES		18.13	20.92	21.65	21.65
MM		460.54	531.46	549.87	549.87
AC-FT		19.	22.	23.	23.
THOUS CU M		24.	28.	28.	28.

•••••••••• •••••••••• •••••••••• •••••••••• ••••••••••

HYDROGRAPH ROUTING

[illegible] ANALYSIS

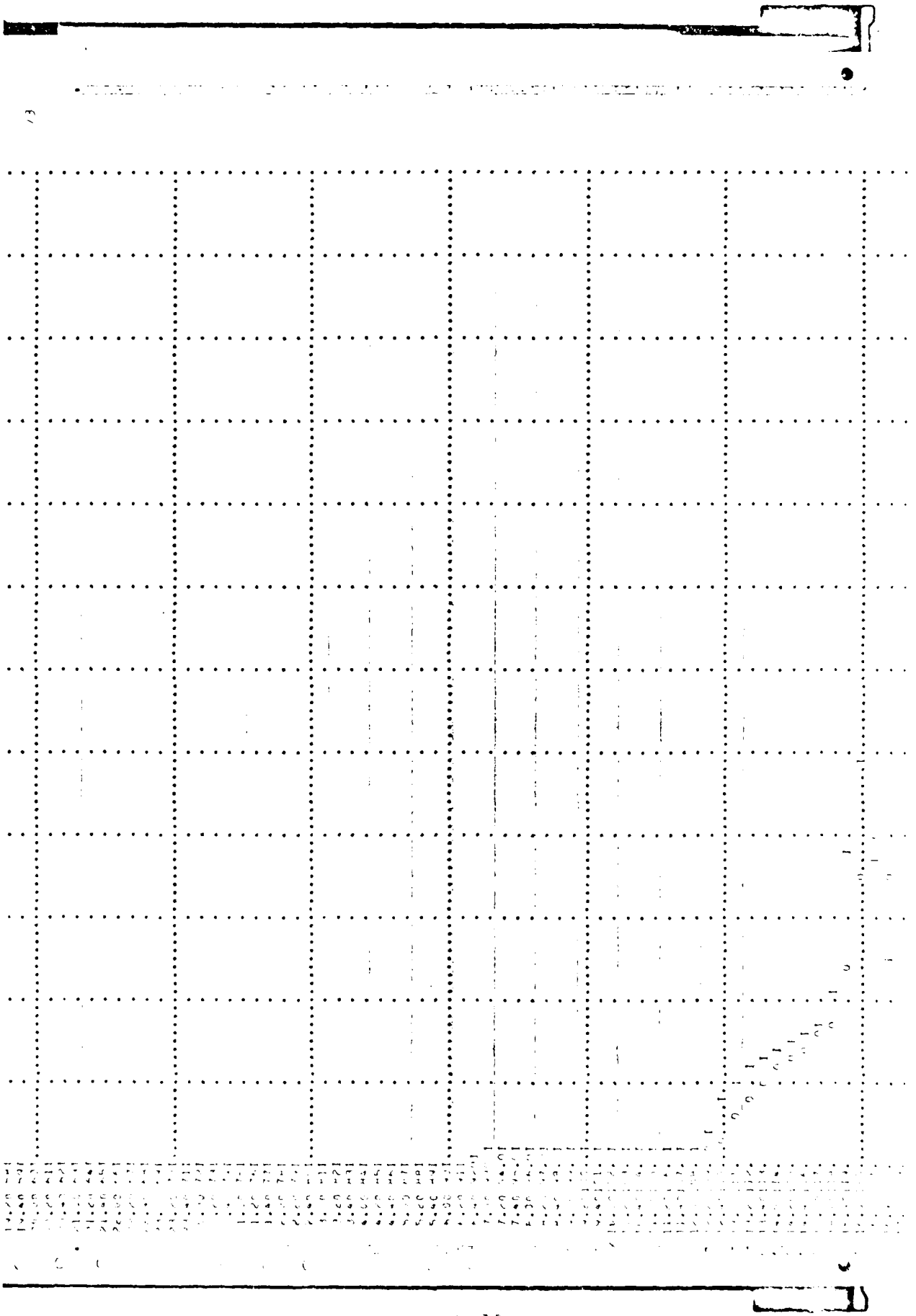
```
                    ISTAQ   ICOMP   IECON   ITAPE    JPLT    JPRT   INAME  ISTAGE   IAUTO
                        1       1       0       0       0       0       1       0       0
                                          ROUTING DATA
            QLOSS   CLOSS     AVG    IRES   ISAME    IOPT    IPMP            LSTR
              0.0   0.000    0.00       1       1       0       0               0

                    NSTPS   NSTDL     LAG   AMSKK       X     TSK   STORA  ISPRAT
                        1       0       0   0.000   0.000   0.000     -1.       0

SURFACE AREA=       2.       2.       2.       2.       3.

    CAPACITY=       0.       2.       6.      11.      21.

   ELEVATION=     361.     362.     364.     366.     370.

                     CREL   SPWID   COQW    EXPW   ELEVL    COQL   CAREA    EXPL
                    361.0    15.0    3.3     1.5     0.0     0.0     0.0     0.0

                                          DAM DATA
                                 TOPEL    COQD    EXPD  DAMWID
                                 365.6     3.3     1.5      0.

                           STATION      1, PLAN 1, RATIO 1

                                END-OF-PERIOD HYDROGRAPH ORDINATES

                                            OUTFLOW
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         1.         1.         1.
         1.         1.         1.         1.         1.         1.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         1.         1.         1.         1.         2.         2.         2.
         2.         2.         2.         2.         2.         2.         2.         2.         2.         3.
         6.         8.        10.        12.        13.        14.        16.        17.        24.        35.
        40.        45.        27.        22.        19.        17.        14.        11.         8.         5.
         4.         3.         2.         2.         1.         1.         1.         1.         1.         1.
         1.         1.         0.         0.         0.         0.         0.         0.         0.         0.

                                            STORAGE
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         1.         1.         1.         1.         1.         1.         1.         1.         2.
         2.         2.         1.         1.         1.         1.         1.         1.         1.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
         0.         0.         0.         0.         0.         0.         0.         0.         0.         0.

                                             STAGE
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
```

[illegible]	361.0	361.0	361.0	361.0	361.0	361.0	361.1	361.1	361.1
361.1	361.1	361.1	361.1	361.1	361.1	361.0	361.0	361.0	361.0
361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0
361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0
[illegible]	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0
361.0	361.0	361.0	361.1	361.1	361.1	361.1	361.1	361.1	361.1
361.1	361.1	361.1	361.1	361.1	361.1	361.1	361.1	361.1	361.2
361.2	361.3	361.3	361.4	361.4	361.4	361.5	361.5	361.6	361.8
[illegible]	361.8	361.7	361.6	361.5	361.5	361.4	361.4	361.3	361.2
361.2	361.1	361.1	361.1	361.1	361.1	361.1	361.1	361.1	361.1
361.1	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0	361.0

PEAK OUTFLOW IS [illegible]. AT TIME [illegible].33 HOURS

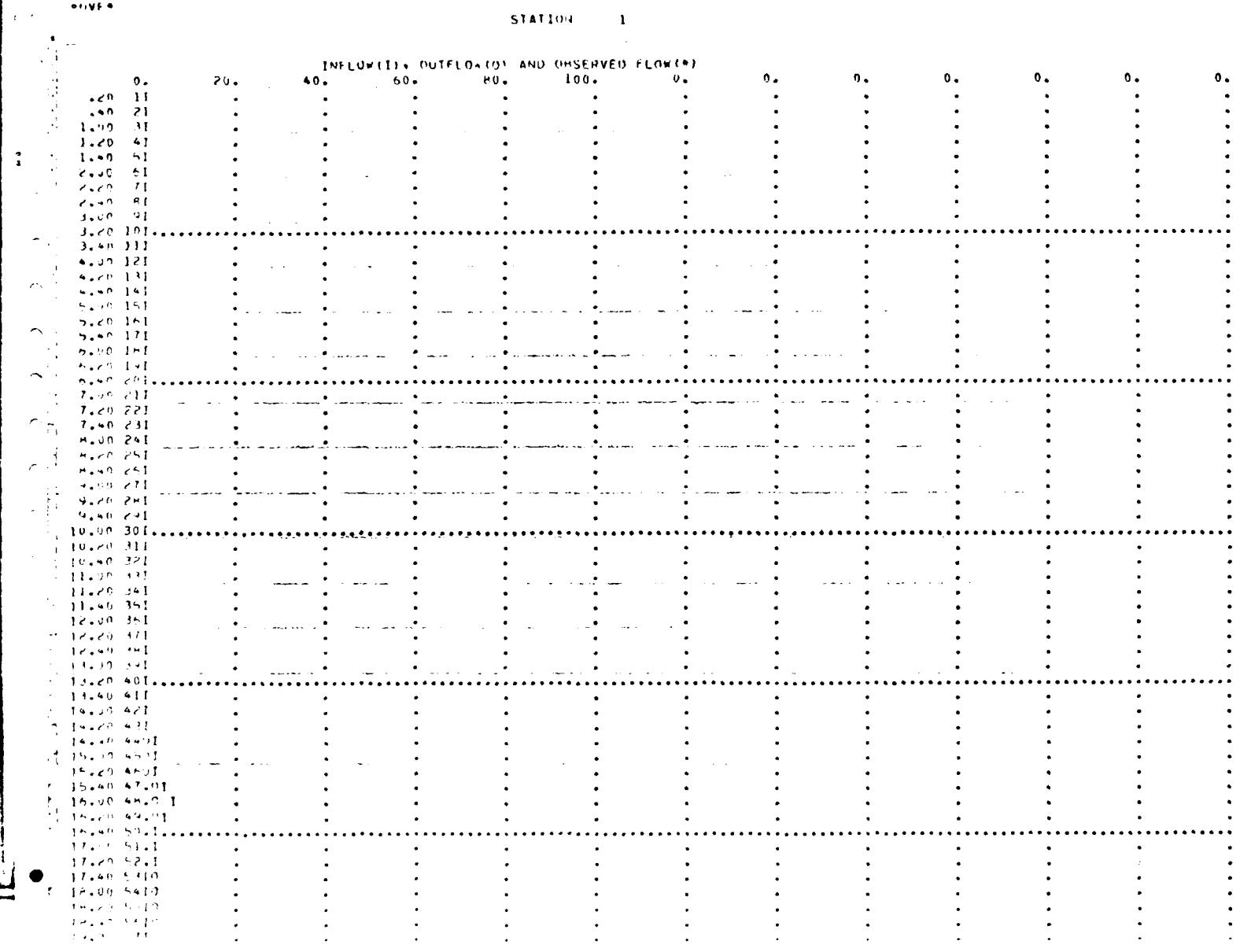
	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	[illegible].	19.	6.	3.	417.
CMS	1.	1.	0.	0.	12.
INCHES		8.81	10.43	10.77	10.77
MM		223.87	264.89	273.61	273.61
AC-FT		9.	11.	11.	11.
THOUS CU M		12.	14.	14.	14.

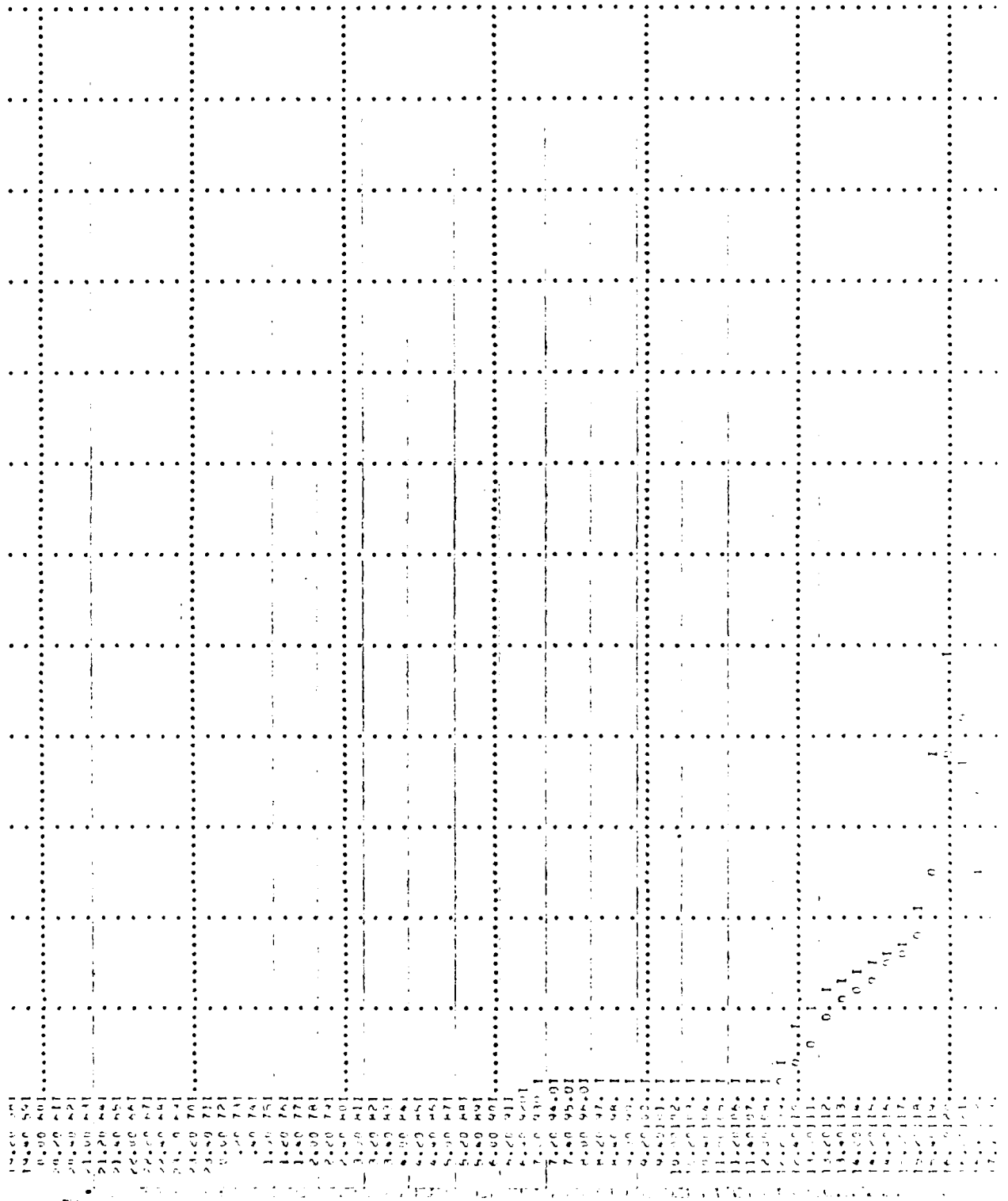
STATION 1
INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)
0.
10.
20.
30.
40.
50.



```
                                        STATION     1, PLAN 1, RATIO 2

                                   END-OF-PERIOD HYDROGRAPH ORDINATES

                                                OUTFLOW
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         1.         1.         1.         2.         3.         3.
          3.         2.         2.         2.         1.         1.         1.         1.         1.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         1.         2.         2.         3.         3.         3.         4.         4.
          4.         4.         4.         4.         4.         4.         4.         4.         5.         8.
         12.        17.        21.        24.        27.        29.        32.        36.        50.        76.
         83.        68.        52.        42.        36.        32.        27.        21.        14.         9.
          6.         4.         3.         2.         2.         2.         1.         1.         1.         1.
          1.         1.         1.         1.         1.         1.         1.         1.         0.         0.

                                                STORAGE
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         1.
          1.         1.         1.         1.         1.         1.         2.         2.         2.         3.
          3.         3.         2.         2.         2.         1.         1.         1.         1.         1.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.
          0.         0.         0.         0.         0.         0.         0.         0.         0.         0.

                                                 STAGE
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.1      361.1      361.1      361.2      361.2
      361.1      361.1      361.1      361.1      361.1      361.1      361.1      361.1      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0      361.0
      361.0      361.0      361.1      361.1      361.1      361.1      361.2      361.2      361.2      361.2
      361.2      361.2      361.2      361.2      361.2      361.2      361.2      361.2      361.2      361.3
      361.4      361.5      361.6      361.6      361.7      361.7      361.7      361.8      362.0      362.3
      362.4      362.2      362.0      361.9      361.8      361.7      361.7      361.6      361.4      361.3
      361.2      361.2      361.2      361.1      361.1      361.1      361.1      361.1      361.1      361.1
      361.1      361.1      361.1      361.1      361.1      361.1      361.1      361.0      361.0      361.0

PEAK OUTFLOW IS        83. AT TIME  40.33 HOURS

                                        PEAK     6-HOUR    24-HOUR    72-HOUR     TOTAL VOLUME
                               CFS       83.        36.        11.         6.             805.
                               CMS [illegible]       1.         0.         0.     [illegible]
```

	17.67	20.41	21.67	21.67
	451.04	530.07	547.03	547.03
AC-FT	19.	22.	23.	23.
THOUS CU M	23.	27.	28.	28.


STATION 1
INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)
0. 20. 40. 60. 80. 100.



PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS RATIO 1 .50	RATIO 2 1.00
HYDROGRAPH AT	1	.02	1	49.	98.
	(	.05)	(	1.39)(	2.78)(
ROUTED TO	1	.02	1	40.	83.
	(	.05)	(	1.14)(	2.36)(

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	361.00	361.00	365.63
STORAGE	0.	0.	10.
OUTFLOW	0.	0.	498.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.50	361.87	0.00	2.	40.	0.00	40.33	0.00
1.00	362.41	0.00	3.	83.	0.00	40.33	0.00

A. Size Classification

Height of dam = 53 ft.; hence Intermediate

Storage capacity at top of dam (elev. 365.6)* = 26 AC-FT.; hence small

Adopted size classification Intermediate

B.i) Hazard Potential

This dam is part of the north wall of American Can Co. Failure would cause extensive damage to the Commercial Building. The Pond is used for fire protection supply water by American Can Co.

ii) Impact of Failure of Dam with pool at weir crest.

It is estimated from the "rule of thumb" failure hydrograph, that the following adverse impacts are a possibility by the failure of this dam.

a) Loss of homes None;
b) Loss of buildings 1;
c) Loss of highways or roads None;
d) Loss of bridges None;

The failure profile can affect a distance of N/A feet from the dam.

C. Hazard Potential Classifications

HAZARD	SIZE	TEST FLOOD RANGE
High	Intermediate	PMF

Adopted Test Flood = PMF = 4900 CSM

= 98 CFS

D. Overtopping Potential

Drainage Area 13.77 Acres = 0.02 sq. miles

Spillway crest elevation = 361.0 ACCD

Top of Dam Elevation* = 365.6 ACCD

Maximum spillway discharge

Capacity without overtopping of dam = 500 CFS
"test flood" inflow discharge = 98 CFS
"test flood" outflow discharge = 83 CFS

* Top of overflow weir opening.

AMERICAN CAN COMPANY DAM

Dam Failure Analysis

1. Failure discharge with pool at top of weir (elev. 361.0) = 9430 CFS
2. Depth of water in reservoir at time of failure = 18.0 ft.
3. Maximum depth of flow downstream of dam = 3.5 ft.
4. Water surface elevation just downstream of dam at time of failure) = 324.5

The failure discharge of 9430 CFS will enter The American Can Company Building and be contained.

The failure discharge will be contained within the building resulting in 3.5 feet of water in its lowest parking level (5th level).

The failure profile will have the following hydraulic characteristics:

DISTANCE FROM THE DAM	WATER SURFACE ELEVATION	REMARKS
0	361.0	Upstream of dam
0	324.5 (within building)	Downstream of dam

"Rule of Thumb Guidance for Estimating Downstream Dam Failure Analysis"

DATA

Name of Dam American Can Company

Location South of Mount Pleasant, New York

Drainage Area 0.02 sq. mi., Top of Dam* 365.6

Spillway Type Overflow- sharpcrest, Crest of Spillway 361.0

Surface Area @ Crest Elev. 2.3 Acres = 0.004 sq. mi.

Pool Bottom Near Dam = 343.0 Upstream, 300.0 Downstream

Assumed Side Slopes of Embankments = 2.5:1 upstream, vertical downstream

Depth of Pool at Dam (Yo) = 18 Feet

Mid-Height Elev. 352.0

Length of Dam at Crest = 330 Feet

Length of Dam at Mid-Height = 294 Feet

25% of Dam Length at Mid-Height = W_b = 73.5 Feet

Step 1

Storage (S) at time of failure 18 Ac-FT
(Equal to top of weir)

Step 2

Peak Failure Discharge

$Q_{pl} = 8/27\ W_b \sqrt{g}\ Yo^{3/2}$

$= 1.68\ W_b\ Yo^{3/2} =$ 9430 cfs

Failure is assumed to coincide with pool elevation at top of weir.

* Top of overflow weir opening.

BY T.E. DATE 1/30/77 SUBJECT DOWNSTREAM INSPECTION SHEET NO. 1 OF 1

CHKD BY EKJ DATE 1/31/77 JOB NO. [illegible]

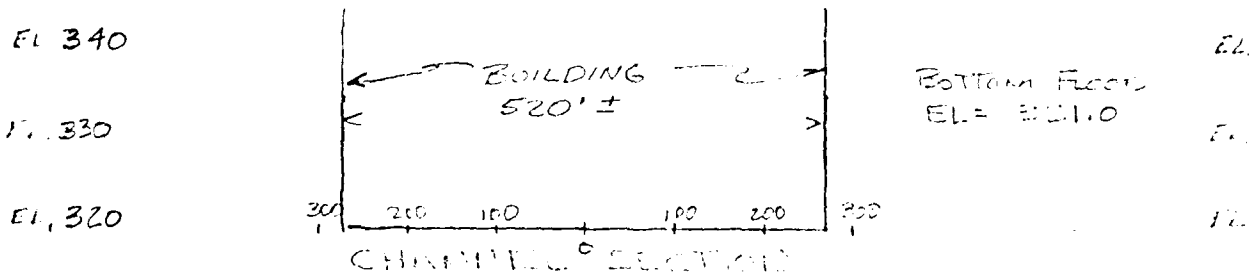
DOWNSTREAM W.S.EL. COMPUTATION

NAME OF DAM: AMERICAN CAN Co.

SECTION LOCATION: AT FACE OF DOWNSTREAM FACE

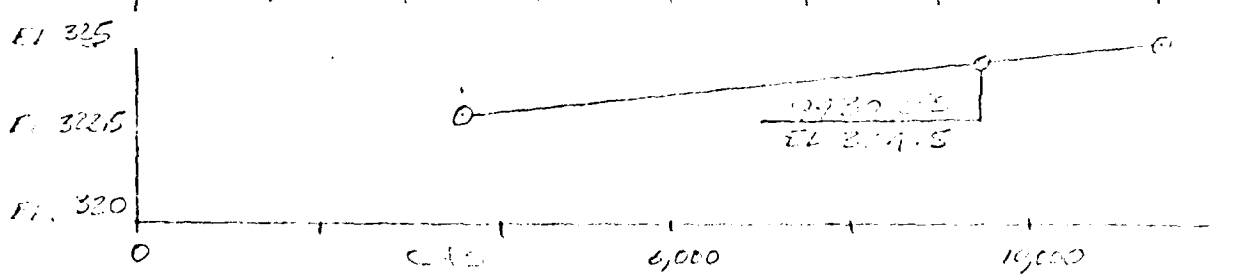
USING: $Q = 1.486/n A R^{2/3} S^{1/2}$

WHERE: $n_1 = 0.02$ SLOPE = .001% (ASSUMED)



Q_{PMF} = 9480 cfs STORAGE (-) 26 AC-FT

EL	WIDTH	A	R	R^2/3	S	V	Q
325	2080	528	3.94	2.49	.03	74.3	11,567
323	1040	524	1.98	1.58	.03	24.8	9,351



BOTTOM FLOOR WILL FLOOD 3.5' – NO APPRECIABLE DOWNSTREAM SECTIONS DOWN STREAM SHOULD BE CONFINED TO AMERICAN CAN Co.

STAGE DISCHARGE AT 9480 CFS IS: EL 325.5 (3.5' DEEP)

NEXT DOWNSTREAM CROSS SECTION N/A FT. (2) FROM DAM

AMERICAN CAN COMPANY DAM
SPILLWAY RATING CURVE

AMERICAN CAN COMPANY DAM

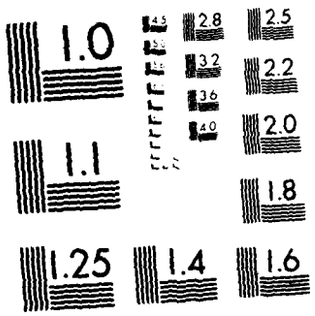
12" DRAIN

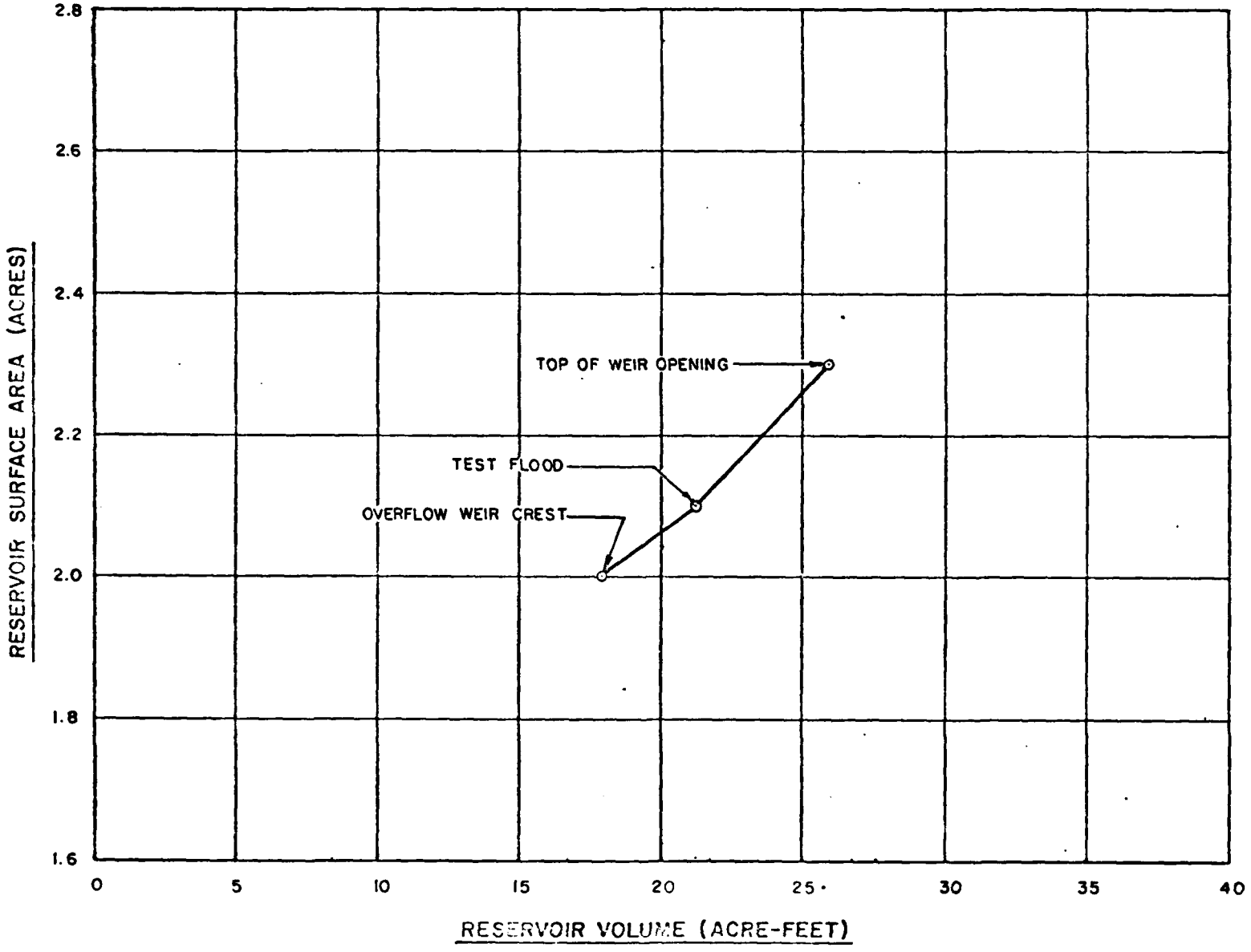
D-30 OUTLET WORKS

AD-A142 756 NATIONAL DAM INSPECTION PROGRAM AMERICAN CAN COMPANY DAM CT 00047 SOUTHWE..(U) CORPS OF ENGINEERS WALTHAM MA NEW ENGLAND DIV FEB 80

F/G 13/13 NL

UNCLASSIFIED





AMERICAN CAN COMPANY DAM
RESERVOIR AREA-CAPACITY CURVE

APPENDIX E

INFORMATION AS CONTAINED IN THE

NATIONAL INVENTORY OF DAMS

INVENTORY OF DAMS IN THE UNITED STATES

(1) STATE	(2) IDENTITY NUMBER	(3) DIVISION	(4) STATE	(5) COUNTY	(6) CONGR DIST.	(7) STATE	(8) COUNTY	(9) CONGR DIST.	(10) NAME	(11) LATITUDE (NORTH)	(12) LONGITUDE (WEST)	(13) REPORT DATE DAY	MO	YR
CT	47	NED	CT	001	04				AMERICAN CAN COMPANY DAM	4106.0	7343.3	17	DEC	79

(14) POPULAR NAME	(15) NAME OF IMPOUNDMENT
NORTH LAKE DAM	NORTH LAKE

(16) REGION	(17) BASIN	(18) RIVER OR STREAM	(19) NEAREST DOWNSTREAM CITY-TOWN-VILLAGE	(20) DIST FROM DAM (MI.)	(21) POPULATION
01	07	TR-LOUDEN COVE OFFSTREAM	GREENWICH	0	59799

(22) TYPE OF DAM	(23) YEAR COMPLETED	(24) PURPOSES	(25) STRUCTURAL HEIGHT (FT.)	(26) HYDRAULIC HEIGHT (FT.)	(27) IMPOUNDING CAPACITIES MAXIMUM (ACRE-FT.)	NORMAL (ACRE-FT.)	DIST	OWN	FED R	PRV/FED	SCS A	VER/DATE
CFDT	1970	D	55	41	26	18	NED	N	N	N	N	

(28) REMARKS
18-LOUDEN COVE, 21-NORTH WALL OF BUILDING, 23-FIRE PROTECTION AESTHETIC

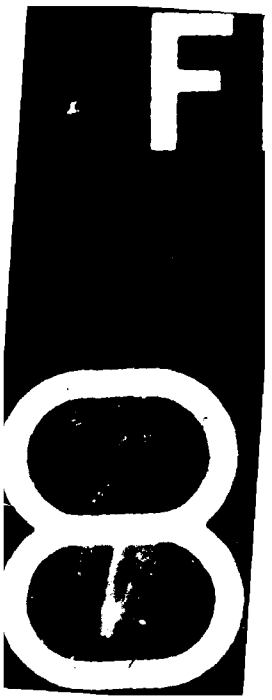
(29) U/S HAS	(30) SPILLWAY CREST LENGTH	(31) TYPE	(32) WIDTH (F.T.)	(33) MAXIMUM DISCHARGE (FT.)	(34) VOLUME OF DAM (CY)	(35) POWER CAPACITY INSTALLED (MW)	PROPOSED (MW)	(37) NAVIGATION LOCKS NO	LENGTH (F.T.)	WIDTH (F.T.)	LENGTH (F.T.)	WIDTH (F.T.)	LENGTH (F.T.)	WIDTH (F.T.)	LENGTH (F.T.)	WIDTH (F.T.)
1	543	U	15	500	1450											

(38) OWNER	(39) ENGINEERING BY	(40) CONSTRUCTION BY
AMERICAN CAN COMPANY	PAUL WEIDLINGER CNSL ENG	TURNER CONSTRUCTION CO

(41) REGULATORY AGENCY DESIGN	CONSTRUCTION	OPERATION	MAINTENANCE
CT DEPT ENVIR PROT	CT DEPT ENVIR PROT	CT DEPT ENVIR PROT	CT DEPT ENVIR PROT

(42) INSPECTION BY	(43) INSPECTION DATE DAY | MO | YR	(44) AUTHORITY FOR INSPECTION
JAMES P PURCELL ASSOCIATES INC	13NOV79	PL-92-367

(45) REMARKS


F
8